



SR 520 Bridge Replacement and HOV Project

DRAFT HIGH CAPACITY TRANSIT PLAN

October 1, 2007



In Cooperation with



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Acronyms

APC	Automatic Passenger Counter
BRT	Bus Rapid Transit
DSTT	Downtown Seattle Transit Tunnel
EIS	Environmental Impact Statement
HCT	High Capacity Transit
HOV	High Occupancy Vehicle
Metro	King County Metro
SIP	Service Improvement Plan
ST2	Sound Transit 2
U-Link	University Link
UW	University of Washington

Executive Summary

SR 520 is a vital link across Lake Washington, carrying more than 115,000 vehicles and 160,000 people east and west each day (**Exhibit ES-1**). In 1997, the Trans-Lake Washington Study started the process for determining the replacement for the Evergreen Point Bridge as it was nearing the end of its design life and becoming increasingly vulnerable to windstorms and earthquakes. Planning for high capacity transit (HCT) was a key part of this effort. The Trans-Lake Study led to the SR 520 Bridge Replacement and HOV Project (SR 520 Project). HCT planning as part of the SR 520 Project shifted to a focus on Bus Rapid Transit (BRT) and integration with Sound Transit's Link light rail transit plans, while making sure that the new bridge, to be built by 2018, can accommodate light rail in the future.

The need to increase the capacity of SR 520 over Lake Washington has been evident for years. How to do that is a question that was resolved early in 2007. Governor Gregoire, state lawmakers, and local officials on both sides of Lake Washington have endorsed a plan to replace the current bridge with a wider six-lane bridge that will have two regular lanes and one High Occupancy Vehicle (HOV) lane in each direction (**Exhibit ES-2**). Because of roadway capacity constraints on both ends of the corridor the HOV lanes will be the only capacity expansion for vehicular traffic. Thus, transit service operating in the HOV lanes must play a major role in accommodating future travel growth in the corridor.

Still to be resolved are questions regarding the preferred configuration of the SR 520 Project on the Seattle side of the lake, mainly the location and configuration of the interchange in the Montlake area and whether or not to rebuild the Montlake Freeway Station. Interchange options in the project's Draft Environmental Impact Statement (EIS) included rebuilding the existing Montlake Boulevard interchange or constructing a new Pacific Street interchange to the east with a new bridge across the cut to Northeast Pacific Street at Montlake Boulevard near Husky Stadium.

What is High Capacity Transit?

Sound Transit's enabling legislation defines High Capacity Transit as a system of public transportation services within an urbanized region operating principally on exclusive rights of way, and the supporting services and facilities necessary to implement such a system, including interim express bus services and high occupancy vehicle (HOV) lanes, which, taken as whole, provides a substantially higher level of passenger capacity, speed, and service frequency than traditional public transportation systems operating mainly on general purpose roadways. Example HCT components include: Sounder commuter rail, Link Light Rail, and Sound Transit Express buses.



Traveling from the Eastside into Seattle on the Evergreen Point Bridge

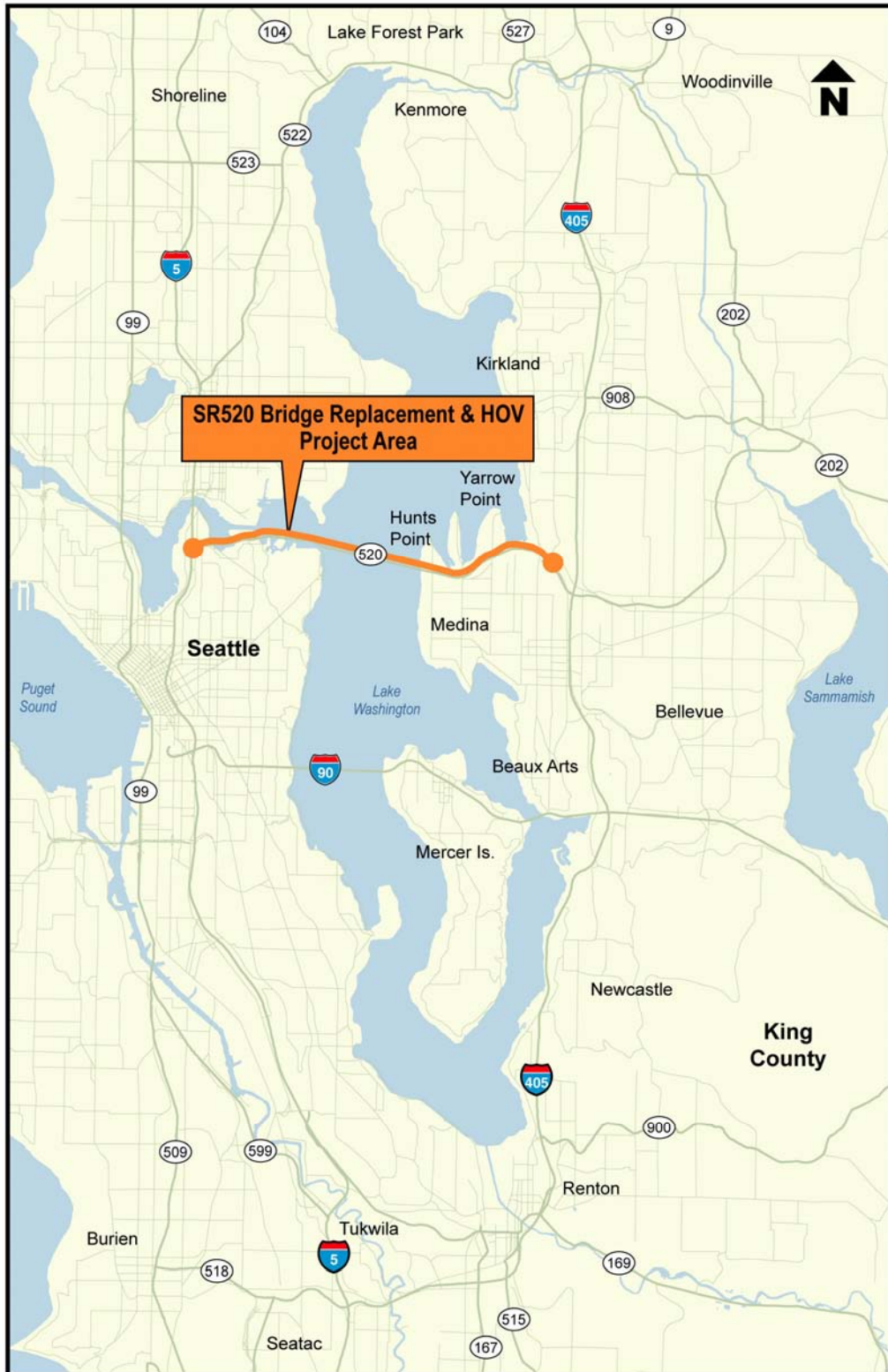


Exhibit ES-1
SR 520 Project Location Map

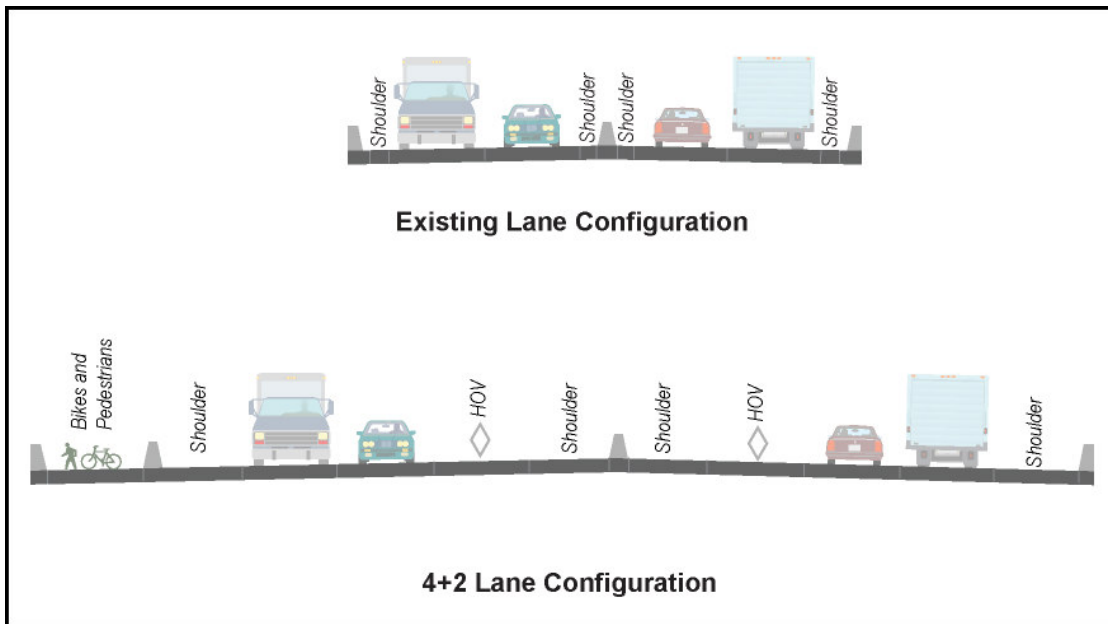


Exhibit ES-2
Existing and 4+2 Lane Configurations across Lake Washington

The interchange alternatives have only minor impacts on HCT plans for the SR 520 corridor.

Rebuilding the Montlake Freeway Station would create a very large highway footprint through the Montlake area and across Portage Bay. If the station is not rebuilt, Eastside bus riders would make their transfers on the east side of the lake at the Evergreen Point Freeway Station and Seattle bus riders would transfer at the Montlake Multimodal Station.

Why is an HCT Plan needed?

Since the primary capacity enhancement in the corridor relies on transit in the new HOV lanes, a long-range plan of phased HCT improvements is needed. The purpose of the plan is to incorporate HCT improvements in the SR 520 corridor that can meet forecasted transit demand and be flexible enough to accommodate the likely significant continued growth in travel in the corridor beyond the 2030 design year. Today, weekday transit ridership in the corridor is nearly 15,000 and has grown by over 30 percent in the past 5 years. Future transit



On the Eastside, the outside HOV lanes are regularly blocked by cars entering the freeway.

demand will be a function of many factors including the overall growth in cross-lake travel demand, toll rates on the new bridge, and the extent of the light rail line planned in the I-90 corridor.

The SR 520 HCT Plan is being developed in two stages. This draft plan is the first stage, and documents the progress as of October 2007. By the end of 2008, the mediation process now underway to address the Seattle-side alternatives will be complete. At the same time, the additional work identified in the draft HCT Plan will be completed, and this will allow adoption of a final HCT Plan.

What are the goals of the HCT Plan?

The SR 520 HCT Plan should accommodate person-travel growth, reduce travel times, increase reliability, improve the travel experience, and expand the markets that can be readily accessed by transit users.

The overall goals of the HCT Plan are to create a phased program that will:

1. Provide sufficient people-carrying capacity to accommodate transit demand forecasted for design year 2030 and be flexible enough to accommodate the potential long-term growth in travel in the corridor.
2. Provide all-day HCT service in the SR 520 corridor that is travel-time and cost competitive with other modes for cross-lake trips to major Seattle and Eastside activity centers.
3. Provide HCT cross-lake service in the SR 520 corridor to major Seattle and Eastside activity centers that is highly reliable and not subject to delays caused by general purpose traffic congestion and traffic incidents.
4. Improve the accessibility of cross-lake HCT riders to other secondary Seattle and Eastside activity centers by integrating the SR 520 system with Sound Transit's existing and planned HCT network and the transit networks of Metro and Community Transit on both sides of the lake.
5. Enhance rider accessibility and the overall rider experience by improving the frequency and coverage of service throughout the day, and reducing the time needed to transfer between modes

serving the SR 520 corridor and make connections to the other elements of the transit system.

6. Provide a vision for the ultimate development of SR 520 HCT in exclusive, dedicated facilities in the corridor.
7. Identify other related improvements outside the project limits that could enhance SR 520 HCT service.

What are the elements of the HCT Plan?

Current regional HCT planning has re-affirmed that the I-90 corridor will be the first rail transit crossing of Lake Washington. Sound Transit has initiated a project-level environmental review for East Link light rail on I-90 between downtown Seattle and Overlake in Redmond via downtown Bellevue. Thus, the initial HCT services in SR 520 will be buses operating in the new SR 520 HOV lanes. Sometime after 2030, light rail, busway, or another dedicated right of way technology might be added to the SR 520 corridor.

This SR 520 HCT Plan has three key elements as follows:

- **BRT in HOV Lanes:** HCT in the SR 520 corridor will first be in the form of BRT operating in the HOV lanes. **Exhibit ES-3** shows the project elements that will support BRT implementation. BRT service in the SR 520 corridor could be implemented in stages as construction proceeds and the supporting roadway and transit facilities come on-line. SR 520 BRT services could begin operation in the corridor early in program implementation and play a role during construction.
- **Montlake Multimodal Transit Station:** SR 520 bus services to and from the University District, light rail facilities, and local bus services all interface in the Montlake area, regardless of which Seattle side configuration is eventually chosen for SR 520. While not a permanent terminus for HCT services nor a park-and-ride facility, the station will be a primary point of access to the campus and can serve as a transfer point among the modes serving the area. Provision for this interface has been an element of Sound Transit's plans for a station in the area as

What is Bus Rapid Transit?

Bus Rapid Transit (BRT) is an enhanced form of high capacity bus transit which mimics some of the features of rail transit by utilizing high capacity, frequent, all-day bus services operating on predominantly exclusive or semi-exclusive rights-of-way. BRT usually employs special branding of vehicles and supporting infrastructure as well as information technologies to enhance visibility, improve communications and make it easy for riders to understand how to use the facilities.



* Westbound-to-Southbound Operations in the a.m. and Northbound-to-Eastbound Operations in the p.m.

Exhibit ES-3

Proposed Transit and HOV Facilities in the SR 520 Corridor

part of the U-Link light rail line. The SR 520 Project has investigated possible enhancements for buses in the area to improve bus access to the UW, as well as transfers among bus routes and between buses and light rail. The volume of these transfers will be affected by decisions on whether the existing Montlake Freeway Station is replaced.

- SR 520 HCT Options after 2030:** Studies of HCT options for travel across Lake Washington concluded that only one exclusive high-capacity transit crossing would be needed between now and 2030, and that the I-90 corridor was the first cross-lake HCT corridor. At the same time, the studies acknowledged that after 2030 (but within the lifetime of the new Evergreen Point Bridge) significant increases in cross-lake travel may warrant dedicated HCT facilities in both corridors. Therefore, the new 520 bridge will be built in a way that allows the structure to accommodate a two-way light rail line or busway at a future date. In addition, work has been done examining how HCT could transition from the bridge to a variety of possible Seattle-side and Eastside alignments.

How will HCT be implemented in the SR 520 corridor?

Over the next year the WSDOT, Sound Transit and Metro in cooperation with the University of Washington (UW) plan to undertake additional work to develop the BRT elements of the plan and identify possible enhancements for the Montlake Multimodal Station. In

addition, the Sound Transit 2 Plan (ST2) includes a planning study of post-2030 HCT modes and routes in the corridor between the University District and Redmond. The results of the planning will be used to update Sound Transit's Long-Range Plan, and potential future implementation of a different form of HCT could be considered as part of a future phase of HCT investments for the region.

By December of 2008 the partners plan to develop a final HCT Plan that will include an implementation strategy identifying the estimated costs, potential funding sources, and implementation responsibility for each element. At the same time, the SR 520 mediation process will be completed and will assist in identification of a preferred configuration for the Seattle side of the corridor.

Chapter 1: Plan Purpose

The overall goal is a plan for high capacity transit (HCT) improvements in the SR 520 corridor. This HCT Plan is a key component of the multimodal SR 520 Bridge Replacement and HOV Project, critical for meeting the mobility needs of the corridor. When combined with other HOV elements of the project, HCT should accommodate the long-term growth in travel demand in the corridor.

This HCT Plan is joint effort of the Washington State Department of Transportation (WSDOT), Sound Transit, and King County Metro (Metro), in cooperation with the University of Washington (UW). This plan is being developed to ensure the effective and efficient coordination of bus services and light rail services throughout the corridor, as required by recent State legislation (ESSB 6099).

This HCT Plan is being developed in two stages; this first stage documents progress as of October 2007, including the following:

- **Chapter 2:** Existing and planned bus transit services and current transit ridership in the corridor.
- **Chapter 3:** The background of HCT planning activities in the corridor, as well as other related planning activities.
- **Chapter 4:** The current status of this HCT plan that has been developed as a part of the SR 520 Bridge Replacement and HOV Project, including concepts for improving existing service and providing for BRT operations in the HOV lanes, planning for a multimodal station in the Montlake vicinity as part of the U-Link light rail project, and possible eventual development of light rail or a busway in the corridor.
- **Chapter 5:** A discussion of the work that will be undertaken over the coming year to complete the plan and develop information on estimated costs and potential funding sources as well as implementation.

Over the next year, the work described in Chapter 5 of this draft HCT Plan will be completed by the partner agencies, and a final HCT Plan will be completed for the SR 520 corridor by December of 2008.

ESSB 6099

In the spring of 2007 the Washington State Legislature passed and the Governor approved Engrossed Substitute Senate Bill (ESSB) 6099. This legislation adopted a six-lane cross section (four general purpose lanes and two high occupancy vehicle lanes) as the preferred alternative for the new SR 520 bridge across Lake Washington. It also put in place a process to mediate a number of major planning and design issues associated with the SR 520 Project.

The legislation also stated that the high occupancy vehicle lanes must support bus rapid transit and that the bridge shall be designed to accommodate light rail in the future. ESSB 6099 directed the Governor's Office to work with the Washington State Department of Transportation, Sound Transit, Metro, and the UW to plan for HCT in the SR 520 corridor. The plan must include alternatives for a multimodal transit station that serves SR 520 in the Montlake interchange vicinity near the UW, and the mitigation of impacts on affected parties.

Why is an HCT Plan needed?

The Evergreen Point Bridge is a major transit corridor.

At present SR 520 is one of the highest volume transit corridors in the region. Existing bus services using SR 520 connect transit riders from a major portion of the area east of Lake Washington to the University District and downtown Seattle, two of the most important transit destinations in the region. SR 520 is also the primary transit corridor for commuters heading east from north and central Seattle to the rapidly growing job centers in Bellevue, Overlake/Redmond and Kirkland.

Today, Metro and Sound Transit buses carry almost 15,000 riders across the Evergreen Point Bridge on an average weekday, including 1,550 westbound passengers during the morning peak hour, accounting for the passenger equivalent of about three-fourths of a full lane of general purpose traffic of additional capacity. The growth in transit ridership in the corridor has been significant over the past 5 years, increasing by over 30 percent. Most of this growth has been in bus travel to and from the UW and reverse commutes to the growing job centers on the Eastside. Ridership from the Eastside to downtown Seattle has stayed relatively stable over the past 15 years. Future transit demand on SR 520 corridor will be a function of many factors, including the overall growth in cross-lake travel demand, toll rates on the new bridge, and the extent of the light rail line planned in the I-90 corridor.

What is High Capacity Transit (HCT)?

Sound Transit's enabling legislation defines HCT as a system of public transportation services within an urbanized region operating principally on exclusive rights of way, and the supporting services and facilities necessary to implement such a system, including interim express bus services and high occupancy vehicle (HOV) lanes. Taken as a whole, HCT provides a substantially higher level of passenger capacity, speed, and service frequency than traditional public transportation systems operating mainly on general purpose roadways. Examples of HCT components include Sounder commuter rail, Link light rail, and ST Express bus.

Current transit operations on the Evergreen Point Bridge have limitations.

SR 520 bus riders experience unreliable and often long travel times as a result of general traffic congestion and unpredictable traffic incident caused delays. While HOV lanes exist in many of the region's freeway corridors, the system on SR 520 is incomplete (**Exhibit 1-1**). HOV lanes in both directions are limited to the east end of SR 520 between 124th Avenue Northeast in Bellevue and West Lake Sammamish Parkway in Redmond.



The configuration of SR 520 today does not support transit reliability and speed, which prevents transit vehicles from moving efficiently through the corridor.



Exhibit 1-1
Existing Transit and HOV Facilities in the SR 520 Corridor

There is no eastbound HOV lane between I-5 and I-405 and a westbound lane is provided only to the east end of the Evergreen Point Bridge. Therefore, bus riders in the SR 520 corridor are delayed by congestion in the general purpose lanes. Bus riders suffer additional congestion delays on I-5 between SR 520 and downtown Seattle, on Montlake Boulevard between SR 520 and Northeast Pacific Street, and through the SR 520/I-405 interchange and associated ramps. These delays and unreliable operations decrease the incentive to use transit and increase the cost to provide transit service.

Completing the HOV lanes in the SR 520 corridor provides new opportunities.

Because of roadway capacity limitations at both the east (I-405) and west (I-5) ends of the SR 520 corridor, adding more general purpose capacity on SR 520 would not substantially increase mobility, which is one of the project's primary goals. Therefore, the SR 520 Project team focused on completing the HOV lane system across the bridge, improving its operation, and providing facilities to support HOV use. A plan is needed now to address how transit can take best advantage of the new facilities, as well as how to integrate new SR 520 HCT service with the other existing and planned HCT improvements, such as the extension of Link light rail north to Snohomish County and east to Bellevue and Overlake via I-90. In addition, the corridor has the potential to serve many other major growing markets such as the Eastside to South Lake Union, Lower Queen Anne and Northgate.

Ultimately, as travel demands grow, dedicated facilities for HCT may be needed in the corridor, and the new Evergreen Point Bridge will be built to accommodate light rail or a dedicated busway in the future. However, additional work is needed to determine the appropriate HCT technology and integration of the alignment into the regional transit system both east and west of the lake crossing.

What are the goals and objectives of this HCT Plan?

This HCT Plan should accommodate person-travel growth, reduce travel times, increase reliability, improve the travel experience and expand the markets that can be readily accessed by transit users.

The overall goal of the HCT Plan is to provide a phased program of HCT improvements that can be accommodated by the new infrastructure, and, when combined with other ridesharing and public transportation systems will be capable of accommodating growth in corridor travel over the long term.

The overall goals of the HCT Plan are to create a phased program that will:

1. Provide sufficient people-carrying capacity to accommodate forecast design year 2030 transit demand and be flexible enough to accommodate the potential long-term growth in travel in the corridor.
2. Provide all-day HCT service in the SR 520 corridor that is travel-time and cost competitive with other modes for cross-lake trips to major Seattle and Eastside activity centers.
3. Provide HCT cross-lake service in the SR 520 corridor to major Seattle and Eastside activity centers that is highly reliable and not subject to delays caused by general purpose traffic congestion and traffic incidents.
4. Improve the accessibility of cross-lake HCT riders to other secondary Seattle and Eastside activity centers by integrating the SR 520 system with Sound Transit's existing and planned HCT network and the public transit networks of Metro and Community Transit on both sides of the lake.

SR 520 Project Goals

The Trans-Lake Washington Study Committee developed goals for the SR 520 Bridge Replacement and HOV Project that have been adopted by the co-lead agencies and all the project's committees:

- Improve safety and reliability
- Increase mobility for people and goods
- Avoid, minimize, and/or mitigate the project effects on neighborhoods and the environment

These goals have been developed into a statement of purpose for the SR 520 Bridge Replacement and HOV Project. The statement of purpose has helped the project team develop and evaluate alternatives for purposes of the EIS analysis by defining the objectives the alternatives must meet.

5. Enhance rider accessibility and the overall rider experience by improving the frequency and coverage of service throughout the day and reducing the time needed to transfer between modes serving the SR 520 corridor and connections to the other elements of the transit system.
6. Provide a vision for the ultimate development of SR 520 HCT in exclusive, dedicated facilities in the corridor.
7. Identify other related improvements outside the project limits that could enhance SR 520 HCT service.

What are the elements of this HCT Plan?

The HCT Plan for SR 520 has three primary components, as follows:

- **BRT Operating in the HOV Lanes:** Until 2030, HCT in the SR 520 corridor will consist of bus rapid transit (BRT) service, integrated with the existing bus service, both of which will operate in the HOV lanes of SR 520 and utilize the direct access ramps and Freeway Stations that support access to the system. SR 520 BRT service could also be implemented as part of the strategy to mitigate impacts during construction of the new bridge.
- **Montlake Multimodal Transit Station:** SR 520 bus service to and from the University District, Link light rail transit and local bus services all interface in the Montlake area, regardless of which Seattle side configuration is eventually chosen for SR 520. While the station will not be a permanent terminus for SR 520 BRT services or University Link (U-Link) light rail transit and will not be a park-and-ride facility, access to the various elements of the public transit system in the area can be enhanced by the provision of quick and easy transfers between these modes as they pass through Montlake on the way to other destinations. Of these services only the U-Link alignment and the location of the light rail station have been determined. SR 520 University District bus service could be routed via either the Pacific or Montlake interchange options. SR 520 bus service to downtown Seattle could include service to a Freeway Station in the area or operate non-stop without an interface.
- **HCT Operating on Dedicated Facilities:** Beyond 2030, the SR 520 Project provides for the possible development of an exclusive

dedicated facility on the Evergreen Point Bridge to serve HCT (BRT, light rail, or possibly some other fixed guideway system). WSDOT plans to build the Evergreen Point Bridge so that it could eventually accommodate the addition of dedicated facilities for HCT. The Sound Transit 2 (ST2) Plan includes a study to determine the most appropriate technology, alignment, and timing for the future development of exclusive HCT facilities in the corridor. On both the Seattle side and Eastside of Lake Washington, a number of HCT alignments both within and outside of the SR 520 corridor are possible.

Chapter 2: Existing and Planned Transit Service on the Evergreen Point Bridge

This chapter provides an overview of the transit services that make use of the Evergreen Point Bridge today. It includes a discussion of ridership patterns, travel times and other pertinent data. Also included is an overview of the bus service improvements now planned for the corridor by Metro. This information provides the basis from which HCT services would be implemented as part of a new bridge.



The South Kirkland Park-and-Ride is an important element of our regional transit system.

How do buses use SR 520 today?

Existing Bus Routes

At present, 23 routes serve the Evergreen Point Bridge – 18 Metro routes, 4 Sound Transit Regional Express routes, and 1 route operated by Community Transit (**Exhibit 2-1**). The majority of routes connect Eastside communities to downtown Seattle, while five routes connect to the University District and four connect to north Seattle. The emphasis of SR 520 bus service is on peak-period travel carrying Eastside commuters to employment and education centers in Seattle, westbound in the morning and eastbound in the evening. A few core routes provide two-way all-day service, and a few routes provide reverse peak service from downtown Seattle and north Seattle to Eastside destinations. One route provides late night eastbound service across SR 520. Today, KC Metro and Sound Transit provide 566 bus trips across the Evergreen Point Bridge on an average weekday and carry almost 15,000 riders.

Service Frequencies

The routes serving SR 520 reach frequencies as high as one bus every ten minutes during peak periods, with midday service provided at

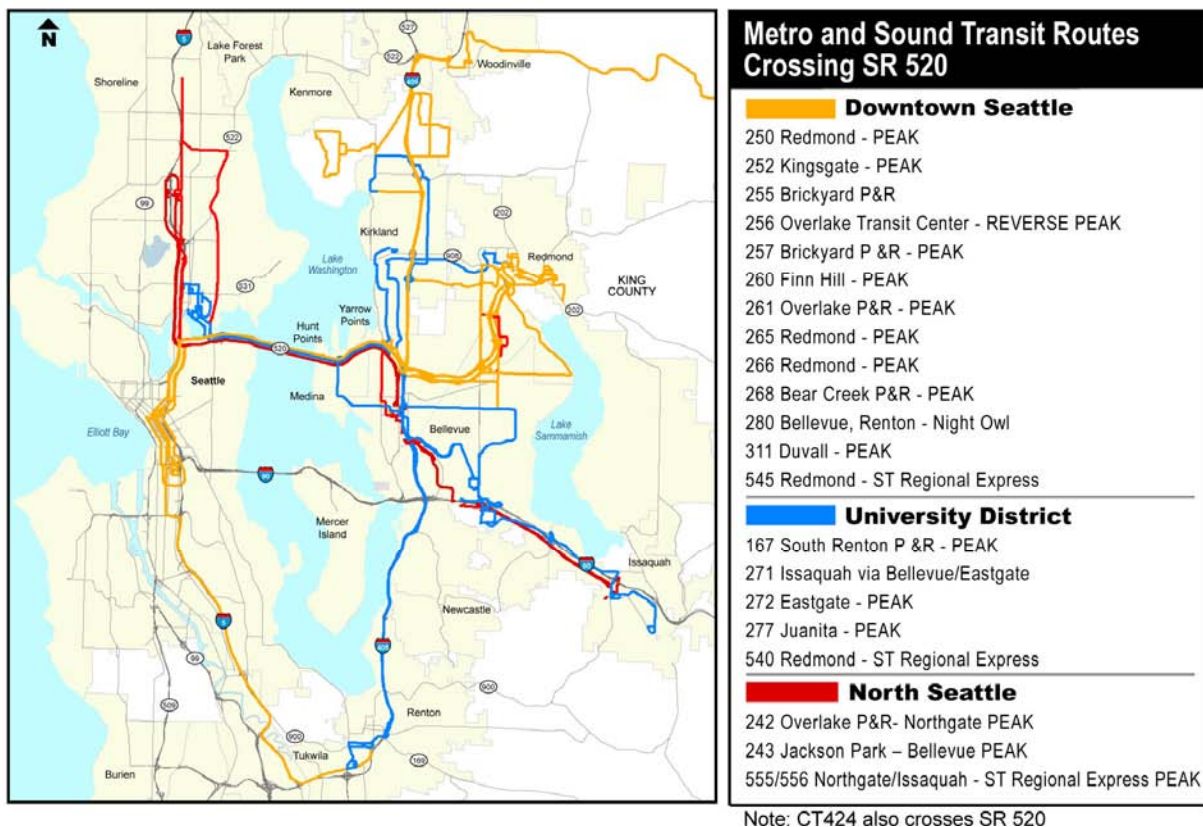


Exhibit 2-1
Existing Bus Routes Crossing SR 520

30-minute frequencies. The combined frequency of all the routes using SR 520 to cross the lake provides for a scheduled bus trip to serve the SR 520 freeway stations every one to four minutes during the morning and afternoon peak periods.

Destinations and Ridership

Exhibit 2-2 illustrates the primary flows of riders both westbound and eastbound during the morning and afternoon peak periods as well as midday. **Exhibits 2-3** and **2-4** provide more detailed information for the origins and destinations of morning and afternoon peak period riders on the bridge.

During the morning peak period (between 6:00 and 9:00 a.m.), there are approximately 4,900 riders crossing the bridge in both directions in 175 coaches (not including “custom bus” school routes and Community Transit service). Roughly 70 percent of riders are traveling west. Of those westbound travelers, about 67 percent head to downtown Seattle,

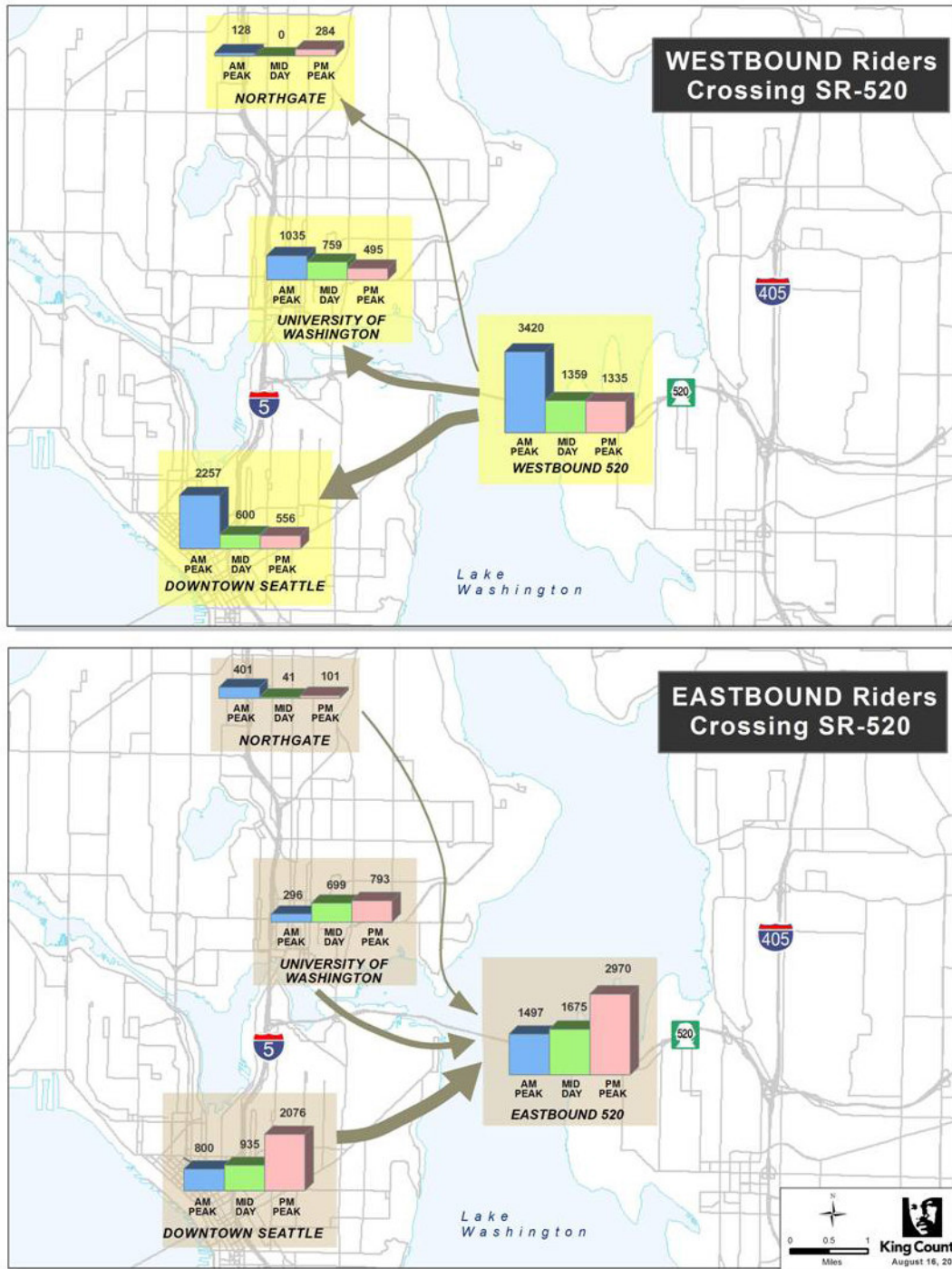


Exhibit 2-2
SR 520 Bridge: Primary Transit Ridership Patterns

Source: Metro APC data – average weekday; February 2007, not including Community Transit service, custom bus trips, and early morning and late night service.

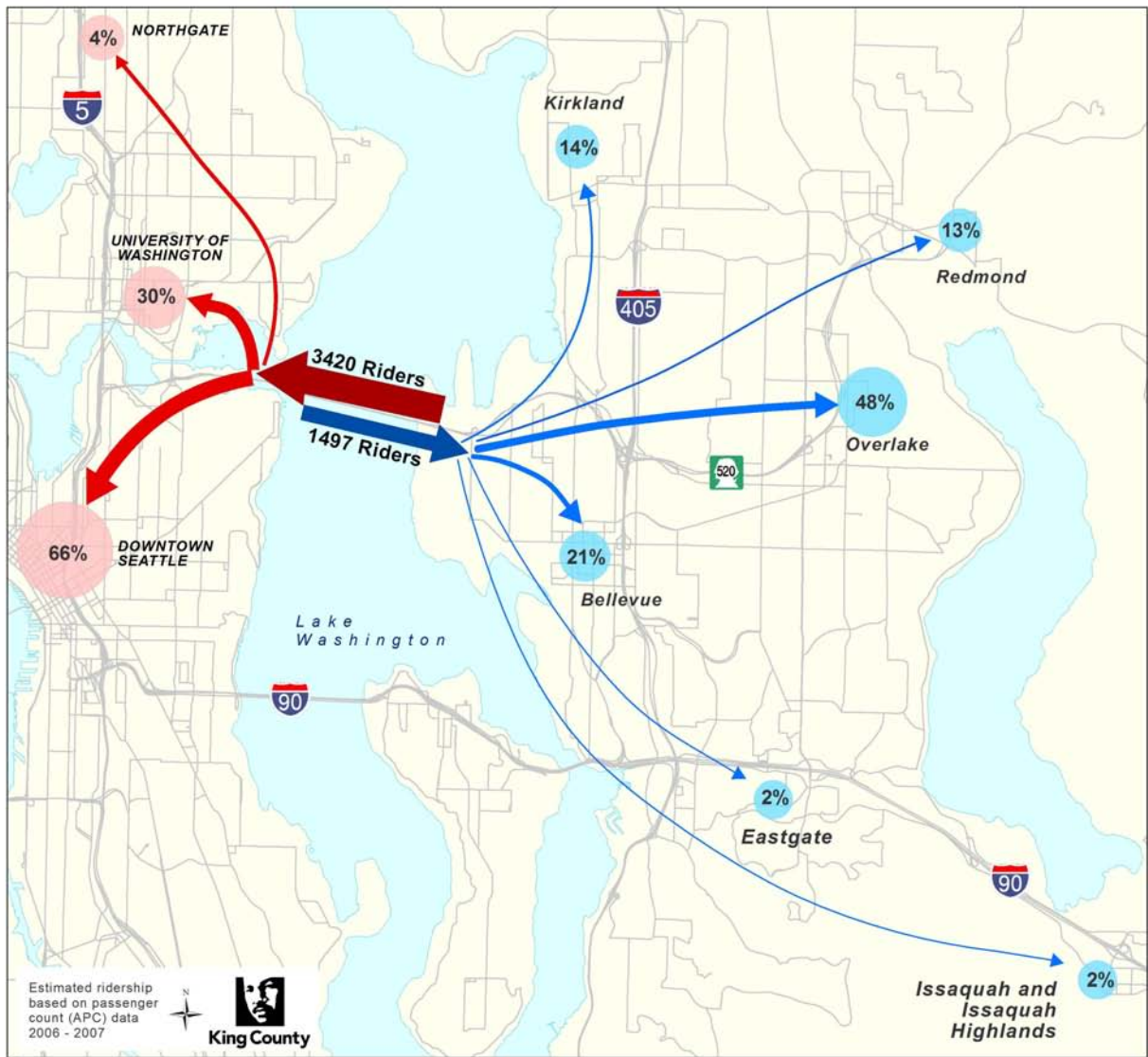


Exhibit 2-3
Morning Peak Transit Ridership

Source: Metro's APC data (Fall 2006 and Spring 2007).

Notes: Westbound estimates are based on screenline data, and eastbound estimates are based on APC data analysis; the morning peak period is 6:00 a.m. to 9:00 a.m., and trips generally represent work trips. Numbers indicate where riders get off, but do not necessarily represent the end of their trip. Destinations represent zones, and therefore include stops in surrounding areas.

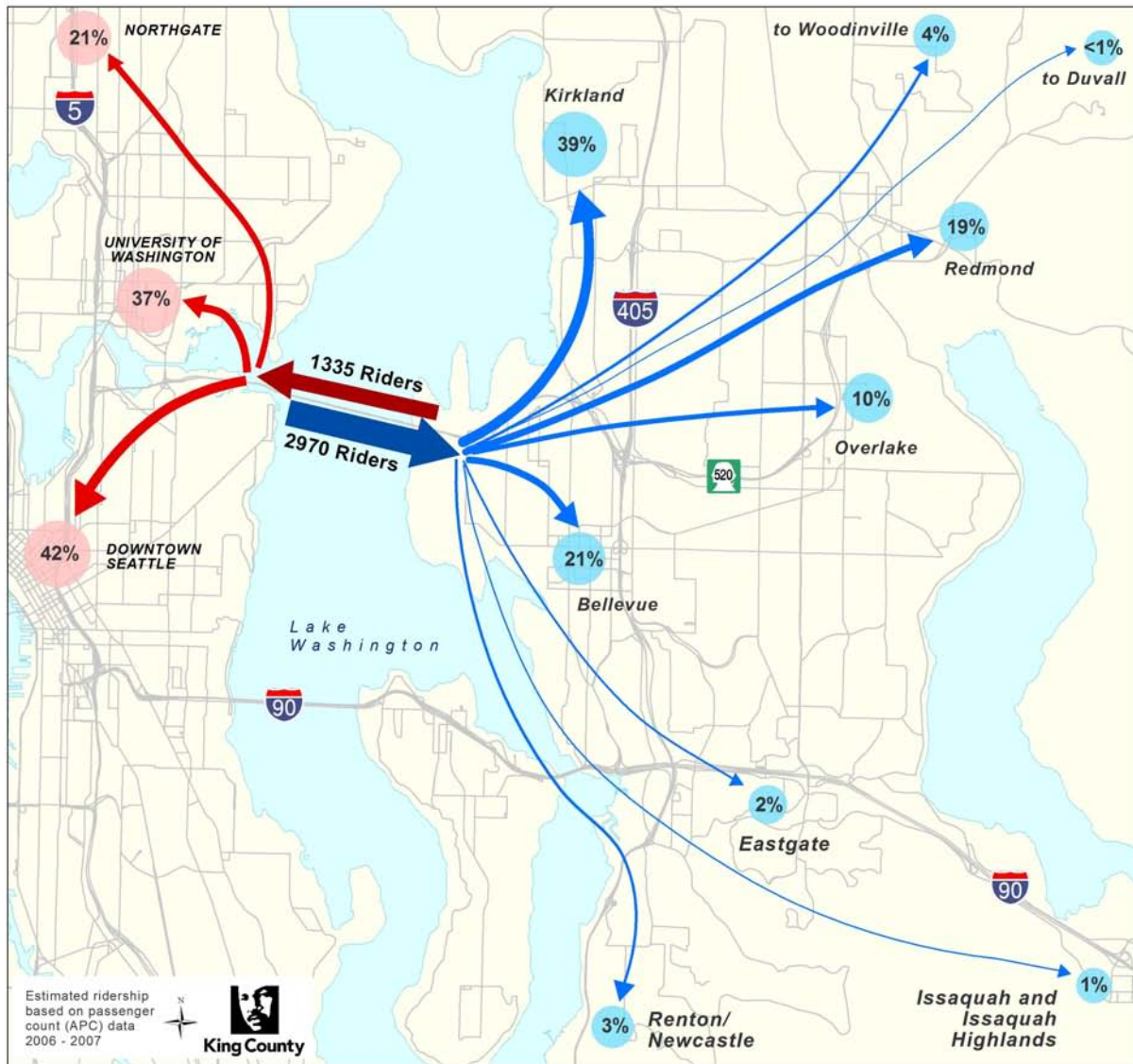


Exhibit 2-4
Afternoon Peak Transit Ridership

Source: Metro's APC data (Fall 2006 and Spring 2007).

Notes: Westbound estimates are based on screenline data, and eastbound estimates are based on APC data analysis; the afternoon peak period is 3:00 p.m. to 6:00 p.m., and trips generally represent trips home. Numbers indicate where riders get off, but do not necessarily represent the end of their trip. Destinations represent zones, and therefore include stops in surrounding areas.

30 percent head to the University District, and the remainder head to north Seattle. Fewer trips are provided eastbound than westbound during the morning peak. Eight routes provide eastbound morning peak service across SR 520. Route 545 has the greatest number of trips and carries the most riders during that time period.

During the afternoon peak, the pattern reverses but volumes tend to be spread over longer periods.

Existing HOV Transit Facilities

A shoulder HOV lane exists westbound on the Eastside between 108th Avenue Northeast and Evergreen Point Road. In addition, HOV lanes are provided in both directions along I-405 both north and south of the SR 520 interchange and in both directions on SR 520 east of I-405 (refer to **Exhibit 1-1**). In Seattle, an HOV lane exists along a short section of Pacific Street and Montlake Boulevard leading to the SR 520 on-ramps, and the eastbound on-ramp contains an HOV bypass lane. While useful to existing transit services, these HOV facilities are not continuous.



Traffic congestion on eastbound SR 520 at the Montlake Boulevard interchange

Travel Times

General traffic congestion in the SR 520 corridor combined with frequent and highly unpredictable delays caused by traffic accidents and minor incidents, result in widely varying travel times in both directions throughout much of the day. Recent travel time data collected by Metro indicates that actual bus travel times between Northeast 51st Street in Redmond and the Montlake Freeway Station can range from 10 to 40 minutes westbound in the morning and 10 to 35 minutes eastbound in the afternoon on a regular basis. This high variability means that travelers needing to keep a regular schedule must plan for the worst conditions and anticipate a relatively long travel time. It also, makes transferring between routes and services difficult and adds significantly to the cost of providing bus service.

What are the SR 520 freeway stations and how are they used today?

The corridor contains three freeway stations located on the shoulders of SR 520 – one at 92nd Avenue Northeast and one at Evergreen Point Road on the Eastside, and one at Montlake Boulevard in Seattle.

Exhibit 2-5 illustrates the relative passenger volumes at each of the freeway stations.

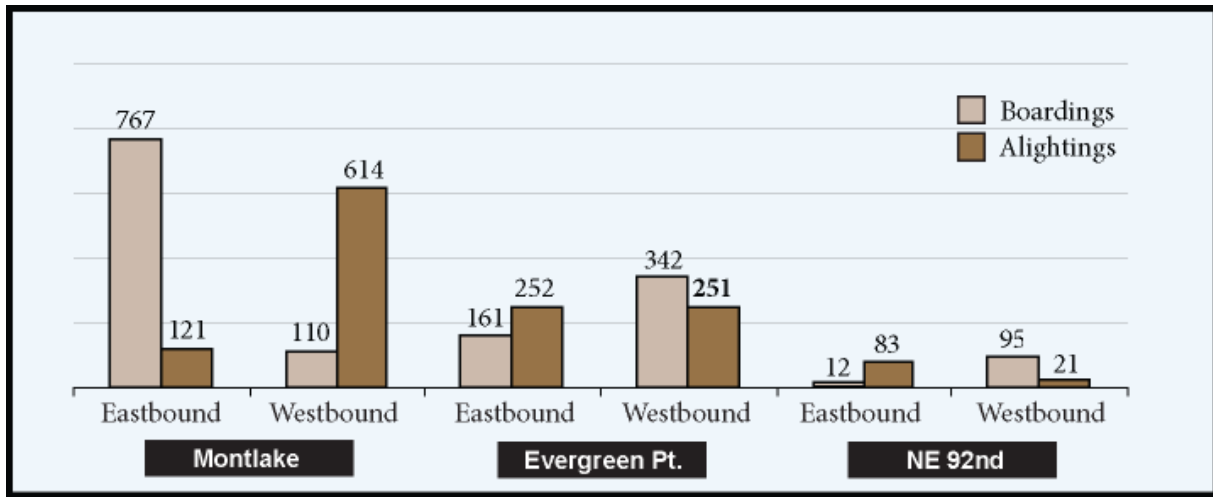


Exhibit 2-5
SR 520 Daily Freeway Station Use (Fall 2006)

Montlake Freeway Station

The Montlake Freeway Station consists of eastbound and westbound bus platforms and shelters on the shoulders of SR 520 near the Montlake interchange. Bus riders access the platforms via stairs on the Montlake overpass. Montlake has the highest usage of all of the freeway stations in the corridor with over 1,600 riders per day in 2006.

The Montlake Freeway Station and its adjacent surface bus stops on Montlake Boulevard are access and transfer points between Seattle and Eastside origins and destinations. For example, some Seattle residents who work at Microsoft's Overlake campus use local buses, walk, ride bicycles or are dropped off to reach the Montlake Freeway Station. There they transfer to SR 520 express buses for the trip to the Overlake area. Conversely, some Eastside residents commute to the UW by riding downtown bound SR 520 buses and then transferring at the Montlake Freeway Station to local service, or walk or ride bicycles across the Montlake Bridge to the campus. Seattle residents commuting

to the Eastside account for roughly 50 percent of the station usage, while trips from the Eastside to the UW account for roughly 30 percent of the trips. A significant number of riders also use the station to travel to and from downtown Seattle from the local area.

Evergreen Point Freeway Station

The Evergreen Point Freeway Station is located near the east end of the Evergreen Point Bridge and is served by many of the same routes as the Montlake Freeway Station. Both eastbound and westbound bus platforms and shelters are located on the shoulders of SR 520. On the south side of SR 520, the Evergreen Point Park-and-Ride lot provides 51 parking stalls just south of the eastbound bus platform. The majority of bus riders using the Evergreen Point Freeway Station transfer to and from bus routes serving the UW (over 50 percent) or downtown Seattle (over 30 percent). Many of the connecting east side routes originate in Redmond, Kirkland, and Bellevue. The freeway station is also used by some Medina residents and students busing to private schools in Seattle. Over 1,000 riders per day used this station in 2006.



The Montlake Freeway Station under Montlake Boulevard allows bus riders to catch one of several routes for many destinations.



The station at Evergreen Point Road serves mainly as a transfer point between buses.

92nd Avenue Northeast Freeway Station

The 92nd Avenue Northeast Freeway Station provides bus access for Hunts Point, Yarrow Point, Medina, and Clyde Hill to routes crossing the Evergreen Point Bridge. The freeway stop is served by 20 routes. It is the least used station in the corridor with only 200 riders per day using the station in 2006.

Most bus riders using this station transfer to and from bus routes serving the UW or work locations in downtown Seattle. Many of these trips originate in Bellevue and Clyde Hill, and, to a lesser degree, Redmond, Kirkland, and Sammamish. This freeway transit station is also used by students busing to private schools in Seattle on special Metro routes.

How do SR 520 services connect with Seattle services in the Montlake area today?

Connections between SR 520 and Seattle-side bus transit services take place today in the Montlake area. In addition to the Montlake Freeway Station and adjacent surface bus stops on Montlake Boulevard, there is significant transfer activity at the bus stop located along the Pacific Street side of the Montlake Triangle. At the UW Medical Center bus stop, bus riders transfer between local and SR 520 buses and access the UW Medical Center and lower campus. Approximately 3,500 bus passengers use the UW Medical Center bus stop every weekday.



Local buses traveling over SR 520 on the Montlake Boulevard overpass

Because the Montlake area is highly congested, HOV improvements have been made on Northeast Pacific Street eastbound and Montlake Boulevard southbound to facilitate bus and carpool access to SR 520. Preferential signalization at the Northeast Pacific Street/Montlake Boulevard intersection allows buses and carpools to bypass long traffic queues that form at the north end of the Montlake Bridge due to bridge openings, heavy traffic or both. When the buses reach the intersection of Montlake Boulevard and Lake Washington Boulevard, they are able to make a signal-protected right turn directly into the HOV bypass lane on the eastbound SR 520 on-ramp. These

treatments have proven helpful in reducing congestion-related delays and reliability impacts of bridge openings for eastbound SR 520 bus routes and carpools. No similar treatments have been made for buses traveling westbound. **Exhibit 2-6** shows existing transit facilities in the Montlake area.



Exhibit 2-6
Existing Transit and HOV Facilities in the Montlake Area

What are the current plans to expand bus service in the SR 520 corridor?

Transit service in the SR 520 corridor is projected to grow by the year 2015 through Metro's *Transit Now* investments and other service expansion opportunities. There is some capacity to carry more riders on the current system but to meet increasing demand and avoid overcrowding, it will be necessary to expand service. An Eastside service restructure is planned for 2008 that will eliminate the Redmond to Kirkland section of Sound Transit Route 540 and add service to

Route 545 from Redmond to downtown Seattle to improve its weekday headway to 10 minutes in the peak period and 15 minutes in the midday.

Transit Now

Transit Now will add service to two core routes, Route 271 and Route 255, across the Evergreen Point Bridge, primarily in the midday and on weekends. *Transit Now* investments will also create an Eastside RapidRide route along the Bellevue-Redmond Road corridor. The Bellevue-Redmond RapidRide route will connect to the SR 520 corridor and provide high-frequency transit service between Bellevue and Redmond seven days per week, approximately 18 hours per day or more. With a projected initial ridership of 3,500 daily riders when the route is launched in 2011, the RapidRide line will make the cross-lake services more accessible by providing fast, reliable connections.

Sound Transit

The ST2 Plan does not include funds specifically set aside for additional transit services or facilities in the SR 520 corridor beyond the routes that Sound Transit currently operates. The ST2 Plan does include a Service Enhancement Fund, which provides funds by subarea to be allocated annually to add some additional trips on routes with increasing demand.

Transit Now and RapidRide

The *Transit Now* initiative, approved by King County voters in the general election on Nov. 7, 2006, will expand Metro transit service by 15 to 20 percent over the next 10 years. Intended to help Metro keep pace with regional growth, the initiative is funded by a one-tenth of one percent sales tax increase.

RapidRide is a bus rapid transit service that will provide frequent, fast, and reliable bus service in certain major arterial corridors. At full implementation, RapidRide will feature:

- Frequent, all-day service;
- Transit stations at high-ridership and high-transfer locations with real-time bus arrival signs and enhanced shelters; and
- High-capacity, low-emission hybrid buses with low floors designed for fast boarding and rider comfort.

Chapter 3: Background

HCT planning in the region and across Lake Washington in particular has a long history dating from the 1960s, shortly after the Evergreen Point Bridge opened. The first plans were developed as part of the proposed Forward Thrust Rail proposals that failed to gain voter approval in 1968 and again in 1970. During the decades that followed Metro Transit and the Puget Sound Regional Council conducted a number of HCT studies and plans that lead ultimately to voter approval in 1996 of the Sound Move Plan, which was based on a long-range vision for HCT services in the region. The Sound Move Plan includes the current Link light rail line now under construction between downtown Seattle and the Seattle-Tacoma International Airport (Sea-Tac Airport).

Why has light rail planning focused on I-90?

Planning for cross-Lake Washington HCT service since the first rail transit plans were proposed in the 1960s has focused on the I-90 corridor. Over the past 40 years, a wealth of studies have examined many ways to provide HCT service between Seattle and the Eastside and re-affirmed the identification of I-90 as the initial cross-lake corridor for high capacity transit.

Sound Transit's Sound Move Plan and Long-Range Vision (1996)

In the fall of 1996, the region's voters approved Sound Move, a plan for HCT improvements in the urbanized areas of King, Pierce, and Snohomish Counties. These improvements include providing the Sounder Commuter Rail between Tacoma and Everett; Link Light Rail between Sea-Tac Airport and the University District, with a potential extension on to Northgate if funds become available; Tacoma Link Light Rail; a network of Regional Express bus routes; and supporting new transit centers, park-and-ride lots and HOV access projects. Sound Move was based on a Long-Range Vision Plan that included HCT to the east connecting Seattle, Bellevue and Redmond by way of I-90, as well as HCT north to Everett and south to Tacoma.

I-90 Memorandum of Agreement

The 1976 Memorandum Agreement (MA) for the construction of I-90, signed by the cities of Bellevue, Mercer Island and Seattle; the Municipality of Metropolitan Seattle; King County; and the Washington State Transportation Commission specified the design and construction of I-90 between Seattle and Bellevue. The agreement resolved nearly twenty years of disputes surrounding the construction of the I-90 roadway between I-405 and I-5. The agreement included several provisions for the conversion of the center roadway to HCT in the future. The facility was to include two lanes designed for and permanently committed to transit use, in either a reversible or two-way directional mode, and the facility was to be designed and constructed so that conversion of all or part of the transit roadway to fixed guideway was possible.

Trans-Lake Washington Study (1998 to 2001)

Not long after the approval of Sound Move, WSDOT and Sound Transit completed extensive studies of HCT options across Lake Washington as part of the Trans-Lake Washington Study. In 2001 these studies reached the conclusion that given the very high construction costs for dedicated HCT facilities and potential level of ridership, only one exclusive HCT crossing of the lake could be justified before 2030, the time horizon for the study. The work also re-affirmed earlier decisions that had identified the I-90 corridor as the first priority for HCT across Lake Washington. This conclusion was reached because the cost for this option would be significantly lower than for any other HCT option, and would cause fewer detrimental environmental impacts than a similar line in the SR 520 corridor. Also, I-90 and the connections to the downtown Seattle Transit Tunnel (DSTT) had been planned and built with eventual conversion to light rail as a major consideration.

The study also concluded that beyond the forecast year of 2030 it is likely that at some point the demand for cross-lake HCT service will warrant consideration of a dedicated HCT facility in the SR 520 corridor.

Amendment to the 1976 Memorandum Agreement (2004)

An amendment to the 1976 Memorandum Agreement for I-90 was developed and approved in 2004 by the parties to the original agreement and Sound Transit. The key principles of the agreement are that:

- HOV lanes on the I-90 mainline eastbound and westbound outer roadways with HCT deployed in the center roadway is the ultimate configuration for I-90.
- Construction of the HOV lanes in the outer roadways should begin as soon as possible.
- Earliest possible conversion of the center roadway to a two-way HCT operation based on the outcome of studies and funding approvals.

Sound Transit's Long-Range Plan and Sound Transit 2 (2004 to 2007)

In 2004, Sound Transit began work on revising the Long-Range Plan for regional HCT and identifying potential projects for consideration in the next phase of HCT investments. The Long-Range Plan designated the East Corridor across I-90 between Seattle and Bellevue and east to Overlake and Redmond as an exclusive light rail or rail convertible bus corridor.

The Sound Transit Long-Range Plan also identifies SR 520 as an HCT corridor. HCT corridors may be candidates for future light rail transit, commuter rail, or BRT service. The final selection of a transit technology will be made based on a detailed corridor study that will examine technology options, environmental issues, actual population and employment growth, development trends, and future transportation priorities of the Sound Transit District's subareas.

What is the current status of light rail planning and development in the region?

The current regional plan consists of the Sound Move Link light rail line from Sea-Tac Airport to Northgate and extensions east across I-90 to Bellevue and Redmond, north to Lynnwood in Snohomish County and south to Tacoma.

Sound Move Light Rail

The 15-mile initial segment of light rail between downtown Seattle and the airport is under construction and scheduled to open in 2009. Sound Transit has recently obtained approval from the Federal Transit Administration (FTA) to start Final Design on the segment north from downtown to the UW station near Husky Stadium called U-Link. The environmental documentation and preliminary design for the UW to Northgate segment is complete, and funds for construction are included in the ST2 Plan. **Exhibit 3-1** illustrates the general alignment of the light rail system from Sea-Tac Airport to Northgate. Sound Transit and the UW have executed an agreement covering the terms and responsibilities for constructing U-Link, and Sound Transit hopes to secure a Full Funding Grant Agreement from FTA by 2009, in time for inclusion in the next federal six-year reauthorization cycle. The

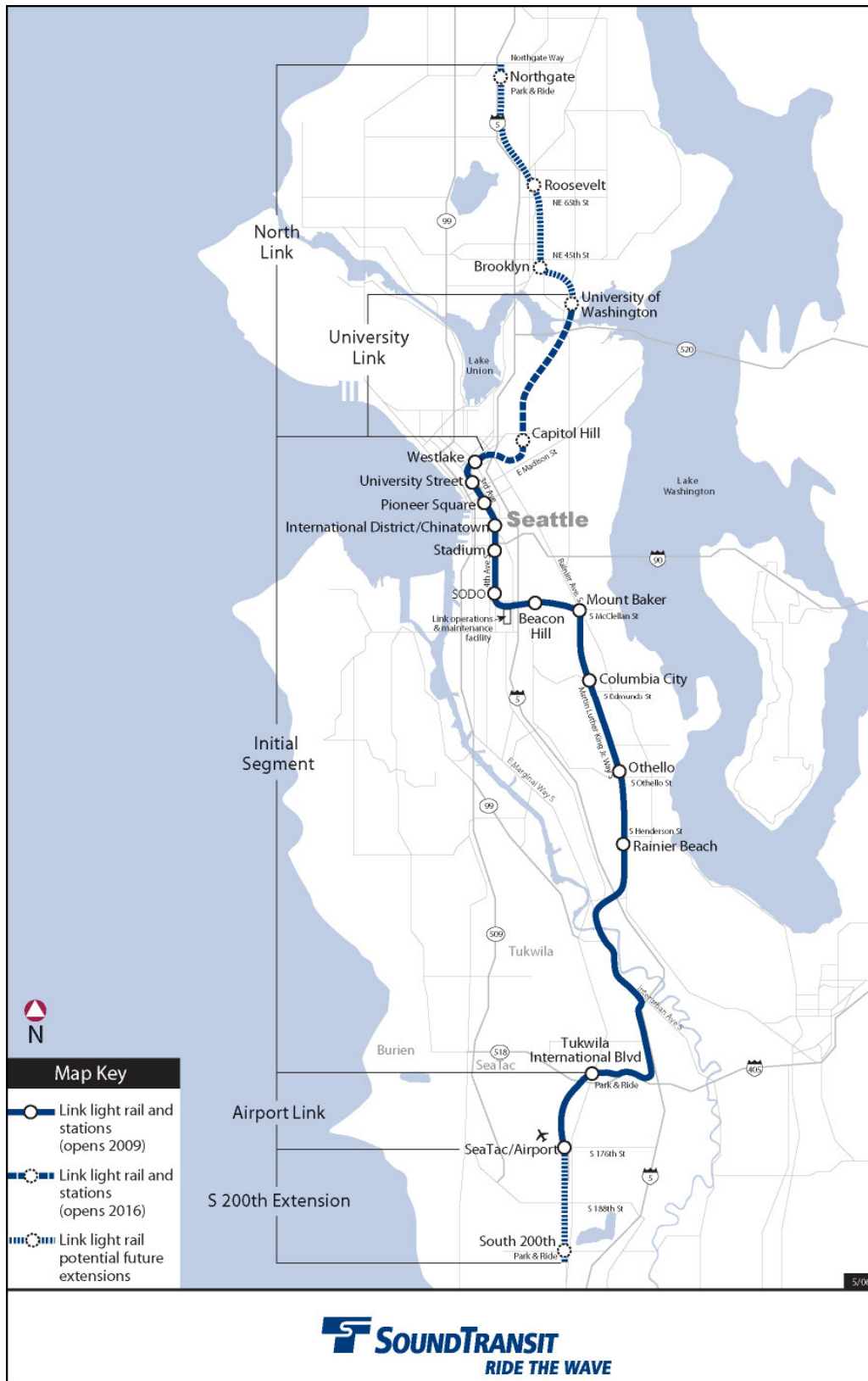


Exhibit 3-1
Central Link Light Rail from SeaTac Airport to Northgate

timing of this agreement is critical since failure to meet these deadlines could significantly delay and possibly jeopardize this critical funding element.

Sound Transit 2 (ST2)

ST2 is the next phase of HCT investments for the region. It will be put to a public vote in November 2007 as a component of the Roads and Transit Plan. The plan was developed based on regional transportation needs and potential projects identified in the updated Long-Range Plan, with review and involvement by local jurisdictions, elected officials, state and local agencies, and the public. Based on extensive public and agency input, the Sound Transit Board adopted the final plan in spring 2007. With a positive vote, the plan would be implemented over the next 20 years (**Exhibit 3-2**).

The ST2 Plan includes an extension of light rail from downtown Seattle across I-90 to downtown Bellevue by 2021 and east to the Overlake Transit Center by 2027, known as East Link. An extension to downtown Redmond has been identified as a high priority in the ST2 plan, to be implemented if funds are secured. ST2 also includes an extension of light rail from the UW station to Northgate by 2018 and north to 164th and Ash Way in Snohomish County by 2027. It also includes an extension of light rail from Sea-Tac airport south to Tacoma by 2027.

Sound Transit has initiated a project-level environmental review for East Link with scoping in September 2006 and is scheduled to issue a Draft EIS in the fall of 2008. The conceptual service plan being developed for East Link assumes that trains will operate at nine-minute headways in each direction during the peak periods and ten-minute headways in the off-peak periods. East Link will be interlined with North Link, providing a direct connection from downtown Bellevue to the UW and Northgate stations by 2021 and to Overlake by 2027. When light rail operates to Overlake, it is assumed that Sound Transit service on the SR 520 corridor will be replaced by light rail service on the I-90 corridor, but transit service from Kirkland to the University District will continue on SR 520.

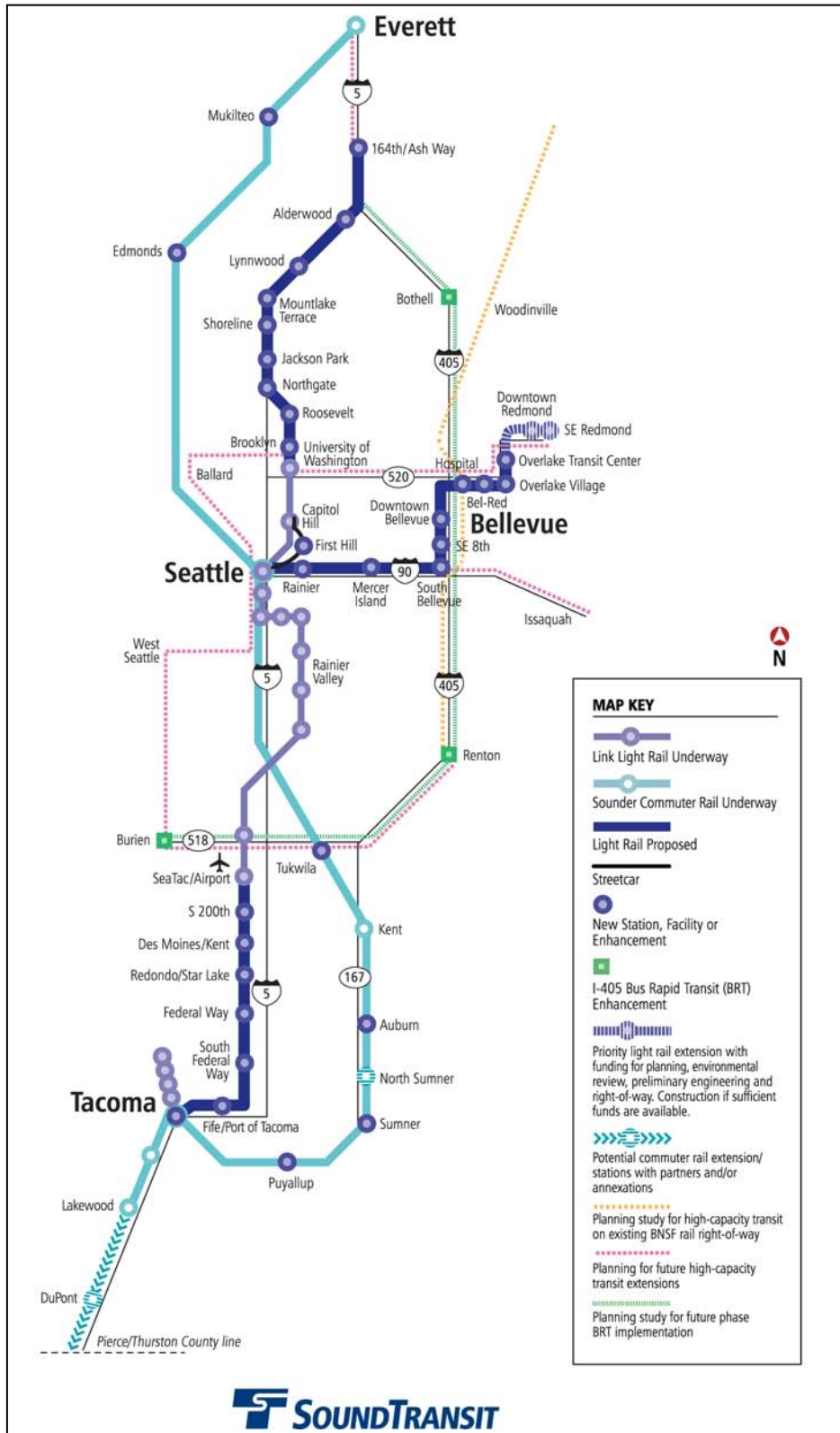


Exhibit 3-2
Sound Transit 2 (ST2)

Chapter 4: SR 520 HCT Concepts

The HCT Plan for SR 520 consists of three primary components. The first is a plan to implement BRT, which will operate in the HOV lanes. The concept is that a form of BRT would be implemented based on the high levels of existing transit service on the bridge. This plan should meet corridor HCT needs based on forecasted demand for design year 2030. The second element is the plan for the Montlake Multimodal Station that provides for the interface of SR 520 University District transit service with the planned University Link light rail station and existing local bus services. The third element is a plan for consideration of the eventual development of a dedicated HCT facility in the corridor to serve buses, light rail or another transit technology.

What is the current status of HCT planning for the SR 520 Project?

The Governor and Legislature have identified a new six-lane bridge with two general purpose lanes and an HOV lane in each direction as the preferred configuration for a new facility across the lake (**Exhibit 4-1**). The HOV lanes to be included in the corridor must be able to support a BRT system. Additionally, the new bridge pontoons will be constructed to accommodate future HCT across the bridge. While the floating portion of the new Evergreen Point Bridge will be built to accommodate future HCT, additional work is needed to determine the appropriate HCT technologies, timing and alignment needed to meet long-range travel demand.

The attached **Exhibit 4-2** illustrates the current plan for a new SR 520 and the principal elements under consideration that will support HCT service by BRT as part of the project.

Is there funding for the SR 520 Project?

- State, regional, and local lawmakers are working to develop a finance plan to present to Governor Gregoire by January 2008.
- Recently, the Regional Transportation Investment District (RTID) proposed a funding package that includes:

Federal sources	\$311 million
State gas taxes	\$560 million
State pooled fund	\$600 – 1,000 million
RTID "Roads & Transit" package	\$1,100 million
Tolling	\$700 – 1,200 million
Finance costs savings & sales tax transfer	Up to \$340 million
Total	\$3.30 – \$4.40 billion

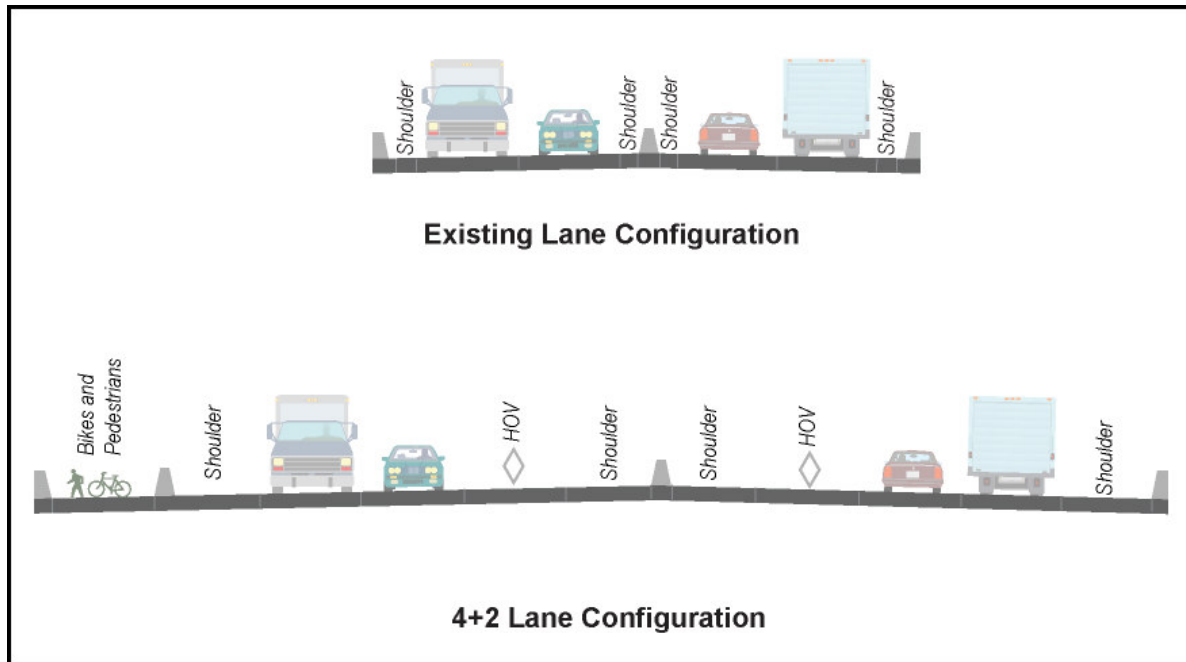


Exhibit 4-1
Existing and 4+2 Lane Configurations

In addition to HOV lanes running the length of the corridor, other plan elements designed to support a BRT system include the following:

- Shift the existing HOV lanes east of 108th Avenue Northeast from the outside to the inside of the roadway.
- HOV direct access ramps to and from the west at the 108th Avenue Northeast interchange to improve bus access to the South Kirkland Park-and-Ride.
- A bus freeway station at 92nd Avenue Northeast with direct transit-only lane access.
- A bus freeway station at Evergreen Point Road with direct transit-only lane access.
- HOV direct access ramps to and from the east as part of both the Pacific and Montlake interchange alternatives.
- An HOV direct reversible lane connecting to the I-5 center roadway.
- An optional bus freeway station at Montlake Boulevard with direct transit-only lane access (only as part of the Montlake interchange alternative without the second Montlake Bascule Bridge design option).



* Westbound-to-Southbound Operations in the a.m. and Northbound-to-Eastbound Operations in the p.m.

Exhibit 4-2 Proposed Transit and HOV Facilities in the SR 520 Corridor

What is the Urban Partnership and how does it affect SR 520?

The SR 520 corridor has been targeted for an Urban Partnership as part of a new federal program that partners the U.S. Department of Transportation (USDOT) with metropolitan areas that commit to the pursuit of aggressive strategies to reduce traffic congestion. Under the Urban Partnership program, the region will apply congestion pricing in the form of tolls, and undertake aggressive transit service improvements, demand management programs, and technological applications in an effort to improve the efficiency of the transportation system.

If tolls are implemented on the existing Evergreen Point Bridge, it is estimated that transit demand in the corridor might increase by 15 to 35 percent. Additional work is currently underway to develop more detailed estimates of the potential effects of tolling on travel demand and mode choice. To accommodate that growth, the goals associated with the Urban Partnership program are to provide additional transit service in the SR 520 corridor, expand key park-and-ride lots and integrate with Metro RapidRide Service.

Urban Partnership Program Status

On August 13, 2007, the USDOT selected the SR 520 Bridge Replacement and HOV Project as a priority project to receive grant funding and additional federal support under the Urban Partnership Program to implement advanced transit, technology, telecommuting, and tolling projects designed to reduce traffic congestion. Under the Urban Partnership Agreement, the Urban Partner – comprising WSDOT, PSRC, and King County – agrees that all projects outlined in the agreement will be in operation by September 30, 2009. In exchange for these commitments, USDOT intends to allocate \$128 million in Federal grant funding according to the terms of a grant agreement to be negotiated by the Department and the Urban Partner.

Grants associated with the Urban Partnership are anticipated to fund fleet expansion and capital improvements such as park-and-ride lot expansions, improvement of key bus stops, and installation of real-time information signs. Additional funding is needed for service increases and could come from toll revenue or other new sources.

Some of the increased transit demand can be accommodated by existing and already planned service expansions and route consolidations. Additional capacity will be needed, however, and strategies to accomplish that include improving all-day and peak-period frequency of core routes, implementing new and expanded reverse peak service to better serve dense residential areas on the west side of the lake, and adding midday service. The exact service plan is yet to be approved through a public process, but the preliminary service concept proposes to add approximately 60 additional one-way peak-period trips on Metro and Sound Transit service on four core routes (Route 255, 271, 540, and 545). Additionally, Metro expects to provide nearly 30 additional one-way peak-period trips on existing and new peak-period only routes made possible through the proposed fleet expansion.

What is BRT and how could it work in the SR 520 corridor?

BRT is an enhanced form of high capacity bus transit that mimics some of the features of rail transit by utilizing high capacity, frequent, all-day bus services operating on predominantly exclusive or semi-exclusive rights-of-way. BRT usually employs special branding of vehicles and supporting infrastructure as well as information technologies to enhance visibility, improve communications and make it easy for riders to understand how to use the system.

The Federal Transit Administration defines BRT as a flexible, high performance rapid transit mode that combines a variety of physical, operating and system elements into a permanently integrated system with a quality image and unique identity. **Exhibit 4-3** illustrates the potential spectrum of possible BRT systems.

The continuous HOV lanes and other HOV components of the SR 520 Project will create opportunities for potentially improving and restructuring transit service in line with the goals of the BRT HCT

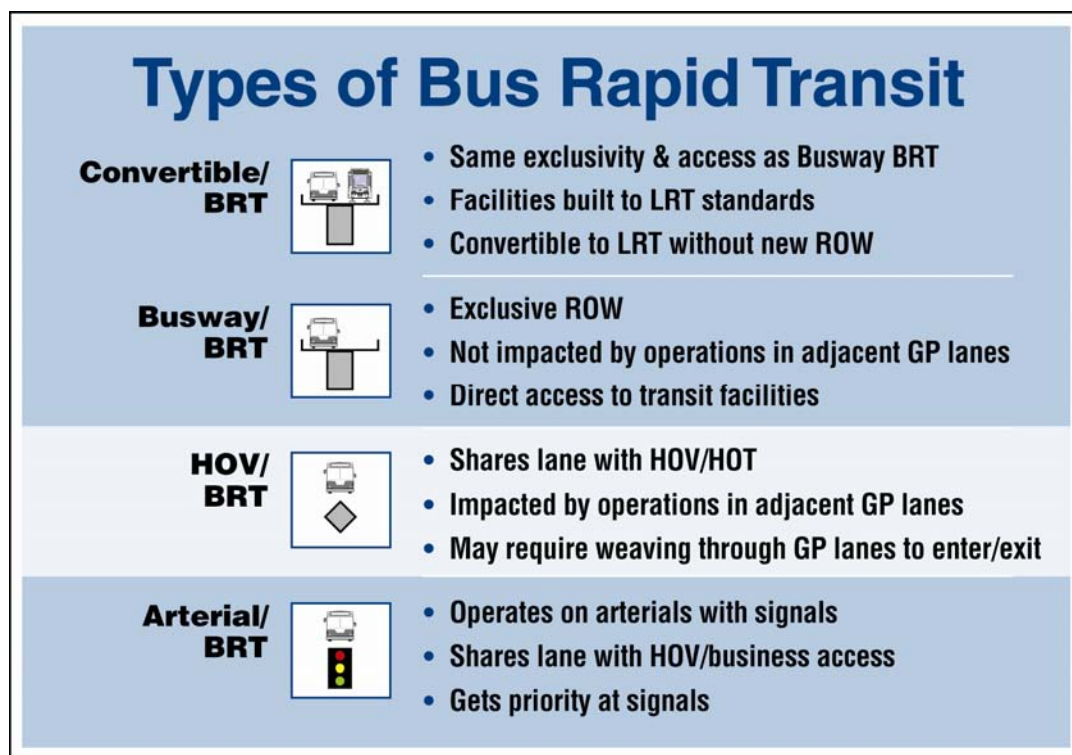


Exhibit 4-3
SR 520 BRT Concepts Considered

service. The HOV elements of the project will improve the reliability of bus operations significantly, shorten travel times for transit riders, and potentially reduce bus operating costs.

BRT Concepts Considered for the SR 520 Corridor

To gain a better understanding of the range of possible BRT options for the corridor, two very different approaches to implementing BRT in the SR 520 corridor were studied.

The first concept was based on a continuation of the existing service pattern, with direct express routes from multiple locations on the Eastside and limited reverse commute services.

The second concept was predominantly a two-way trunk-and-feeder system, with a smaller number of direct “trunk” routes providing more frequent all-day service in both directions

What is a “trunk-and-feeder” BRT system?

A trunk-and-feeder system consists of a main trunk bus route along a major corridor, feeder bus routes to provide neighborhood service connections, and other necessary support facilities. This service concept allows a BRT system to integrate with existing transit services to provide a balanced combination of access and travel speed that is competitive to the single occupant automobile. It also resembles the structure applied for many passenger rail systems, where a light rail, heavy rail, or commuter rail “trunk” is served by a feeder bus system.

during both morning and afternoon peaks. These “trunk” routes would be served by local “feeder” routes.

In addition to improving accessibility to downtown Seattle and the University District, both concepts considered ways to improve accessibility to other neighborhoods on both sides of the lake and to enhance reverse commute access to the growing employment centers on the Eastside.

The two concepts were developed first assuming light rail had yet to be completed in the I-90 corridor. Then they were both modified assuming East Link light rail service was completed all the way to Redmond. This approach helped to understand how light rail on I-90 and BRT on SR 520 could relate to each other.

Service Concept A

Concept A included all the existing express routes plus some additional new routes; also, headways were shortened on some existing routes to meet the high frequencies generally associated with BRT services.

Concept A projected a total of 23 bus routes with a total frequency of bus service across Lake Washington of 63 buses in the peak hour. This includes 13 routes with 41 trips per peak hour to downtown Seattle, and 5 routes with 18 trips per hour to the University District. The other five routes serve other areas in north Seattle. Of the 23 routes, 8 are all-day routes, 11 are peak-period routes serving Eastside origins, and 4 are peak-period reverse-commute routes connecting Seattle origins to Eastside destinations (1 peak-period route runs both ways).

Service Concept B

This concept replaced most of the peak-period express routes with frequent all-day service on a set of two-way trunk routes and a network of feeder routes to provide access to the trunks. In addition to providing more frequent service on SR 520, the trunk routes would operate more reliably than the multiple express-route network. Greater reliability is achieved since the trunk routes would have less exposure to the arterial congestion outside of the SR 520 corridor. Additional feeder service would be provided in areas that are currently served only by peak-

How is BRT different than existing SR 520 bus service?

Current SR 520 Bus Service

- Multiple routes provide a “one-seat” ride – 23 bus routes cross the Evergreen Point Bridge.
- Buses from many different origins, such as neighborhoods and smaller activity centers, serve one or two primary destinations.
- “One seat” service results in longer “through routes,” such as Issaquah to the UW.
- Wait times between buses are typically between 15 and 30 minutes.
- There are many “peak only” routes.

BRT Service

- Fewer “trunk” routes provide service between primary origins and destinations.
- Wait times between buses are typically between 5 and 10 minutes.
- Trunk routes provide frequent, all-day service.
- “Feeder” buses from neighborhoods and smaller activity centers connect to trunk routes.
- Riders transfer between feeder and trunk route buses.

period express routes. This scheme more closely resembles a pure “rail type” HCT service in which the trunk lines operate like a rail line.

In this plan, a total of 8 routes would use the SR 520 HOV lanes, compared to 23 routes in Concept A. The eight routes include three routes to downtown, four routes to the University District, and one route to Northgate. The peak-hour bus volumes are estimated to be approximately 46 buses per hour in both directions. Peak bus volumes are lower than the 62 buses in Concept A, while the off peak direction volumes are higher than in Concept A. The latter is a result of the two-way service that extends beyond the peak periods. Two factors account for Concept B’s lower volume compared to Concept A:

- Many of the existing direct express routes are under-utilized, and will likely continue to be so. The trunk-and-feeder service should allow more efficient utilization on the trunk routes.
- Most of the existing routes use standard-size buses. With the service consolidated into a smaller number of high-frequency trunk routes, articulated buses could be used on all of the trunk routes.

Effects of East Link Light Rail on SR 520 Transit Service

Work to date has assumed that when the East Link light rail line is completed to Redmond, most of the SR 520 bus routes linking Bellevue, Overlake, and Redmond to downtown Seattle will be eliminated, since those trips will be served by light rail. However, the analysis assumed that direct bus service to downtown Seattle from Kirkland and other areas along I-405 north of SR 520 would be retained. Some of the reverse-commute bus routes will also be eliminated. With light rail stations in both the origin and destination areas of these routes, and improved headways on some feeder routes, this service would be redundant.

With light rail in I-90, the number of bus routes in Concept A using SR 520 across Lake Washington would be reduced from 23 to 15 routes and peak-hour frequency would be reduced from 63 bus trips to 42. Similar changes would occur with Concept B with trunk routes going from 8 to 6 bus routes, with total peak-hour frequency of 32 bus trips per hour.

Conclusions of Transit Service Evaluation Analysis

The trunk-and-feeder BRT concept could simplify service and improve the frequency of service for most patrons, especially in the off-peak and reverse-commute markets. It could potentially reduce operating costs and the bus fleet needed, depending on how much of the savings from express service is redeployed into improved local feeder service. One disadvantage, however, is that some passengers would have to make an additional transfer, and therefore might be less likely to use transit.

While the facilities needed to support both concepts are similar, the trunk-and-feeder network would require added capacity at some Eastside park-and-ride lots, and some upgrading of the transfer facilities on the Eastside will be desirable to ease the impact of the additional transfers required.

A trunk-and-feeder plan could be developed incrementally as specific physical improvements are made. For example, when the Northeast 128th Street direct access ramp (Totem Lake) is completed, Routes 252, 257, and 311 could be restructured to provide more frequent and faster service to the Woodinville, Brickyard, and Kingsgate park-and-ride lots.

A variant on the incremental implementation of a trunk-and-feeder scheme would be a hybrid concept, as has been employed for Sound Transit Route 550 on I-90. That is, a basic trunk-and-feeder network could operate throughout the day. Then, during peak periods, additional direct express routes could be added to serve the highest demand connections or those that might be most affected by the added transfers required with the trunk-and-feeder scheme.

How do the SR 520 Project alternatives impact the BRT options?

Current HCT planning in the SR 520 corridor must recognize a number of outstanding questions regarding the preferred configuration of the project on the Seattle side of Lake Washington. As a result, the SR 520 HCT Plan must take into account the alternatives being considered for the Montlake area interchange and the effects of possibly not replacing the Montlake Freeway Station.

Interchange Alternatives

Exhibits 4-4 and 4-5 illustrate the two interchange concepts that were evaluated in the SR 520 DEIS and their relationship to the Montlake Freeway Station, the Montlake Multimodal Station and local and freeway bus routes. The interchange alternatives impact transit only in terms of which route SR 520 buses would use to get to and from the UW and the associated travel time differences. The bus stop locations in the Montlake Triangle area are expected to be the same regardless of the interchange alternative chosen.

With the Montlake Boulevard interchange, buses would use the same routes they use today, while with the Pacific Street interchange buses would travel to and from UW via the Union Bay Bridge. With either alternative, SR 520 buses traveling to downtown Seattle would stay on SR 520.

Montlake Boulevard Interchange Option

In this option, shown in Exhibit 4-4, the existing interchange would be reconstructed. In addition, direct access ramps from the median HOV lanes would be included to provide HOV access between the SR 520 bridge and Montlake Boulevard. These ramps will provide some improvement in travel time and reliability for buses traveling to and from the University of Washington compared to existing conditions. However, buses would continue to operate in the congested section of Montlake Boulevard north of SR 520 and suffer the delay and reliability problems caused by openings of the Montlake Bridge.

Montlake Freeway Station

Replacing the Montlake Freeway Station to serve the inside SR 520 HOV lanes, would result in a very wide highway cross-section through the Montlake area and would affect the footprint of the roadway and bridge structures for a significant distance west across Portage Bay and east through the Arboretum. With the Pacific interchange alternative, it is assumed that the Montlake Freeway Station would not be rebuilt. With the Montlake interchange option both alternatives with and without the freeway station are still under consideration.

If the Montlake Freeway Station is not replaced, access to SR 520 bus services in the area will be affected. The existing station provides primarily two functions. It allows riders on SR 520 downtown Seattle-bound buses to access the University District via a transfer to local buses, walking, or bicycle. It also provides access to Eastside destinations for riders originating in nearby Seattle neighborhoods who reach the station by transferring from local buses, walking, bicycling or being dropped off.

Pacific Street Interchange Option

This option, shown in Exhibit 4-5 would replace the existing Montlake Boulevard interchange with a new Pacific Street interchange located approximately 1,300 feet to the east. The interchange would include HOV direct access ramps to and from the SR 520 Bridge and a new four-lane Union Bay Bridge that would touch down in the University of Washington Husky Stadium parking lot before joining the Northeast Pacific Street/Montlake Boulevard Northeast intersection. This option would also include improvements to the Pacific/Montlake intersection and widening of Montlake Boulevard to the north.

SR 520 bus routes serving the UW/Montlake area would use the new Pacific Street interchange, avoiding the existing congestion related delay and bridge opening reliability problems experienced along Montlake Boulevard.

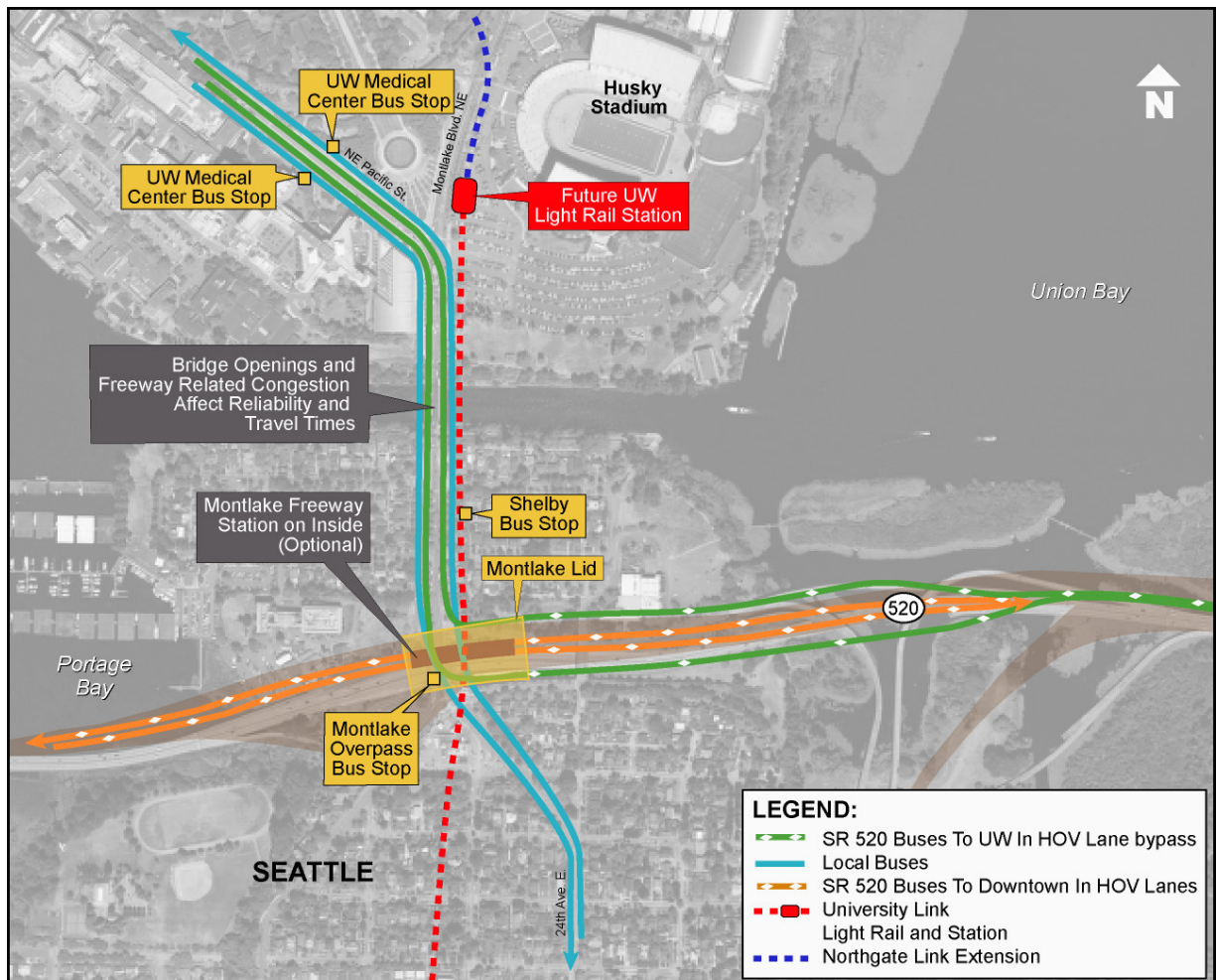


Exhibit 4-4
Future Bus Service with the Montlake Interchange

The first transfer function could be accommodated on the Eastside at one of the other stations, since downtown Seattle-bound SR 520 buses would run non-stop westward from the Evergreen Point Bridge. In addition, a new route from Redmond to the University District could reduce the transfer demand.

The second transfer function would be displaced to the surface bus stops along Montlake Boulevard and to the bus stops surrounding the University light rail station, in the case of the Montlake Boulevard interchange. With the Pacific Street interchange, all transfer activity would shift to the vicinity of the light rail station at the UW. In addition, the trunk-and-feeder BRT option or hybrid scheme could provide a higher level of off-peak access to the Eastside bus routes serving the University District.

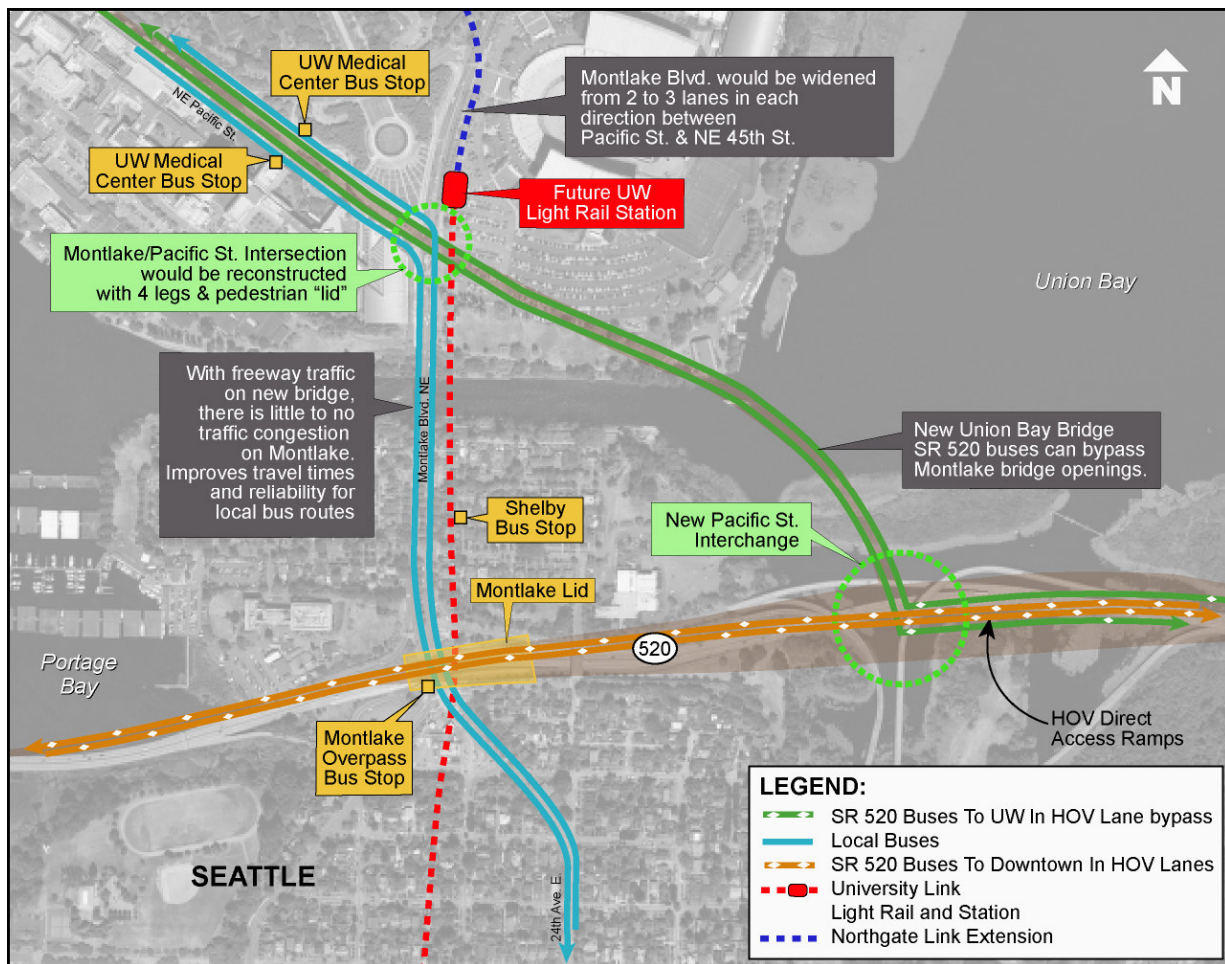


Exhibit 4-5
Future Bus Service with the Pacific Street Interchange

The Montlake Freeway Station also serves a number of people who use it reach downtown Seattle from the immediate neighborhoods. Without the stop these people will need to walk, bicycle or take a local bus to the UW light rail station to board a train for the express trip downtown.

The impacts to bus riders of these changes will depend on the origins and destinations of travelers who now use the Montlake Freeway Station. Those people south of the Montlake Cut will generally have their access times to SR 520 HCT and downtown Seattle transit service increased, while those people north of the Montlake Cut should see a reduction in access times.

How do other regional HOV improvements affect SR 520 BRT?

In addition to the SR 520 improvements, other HOV improvements on the Eastside have been suggested that could enhance BRT service in the SR 520 corridor. These projects are not currently being studied and are not in any adopted plans.

I-405/SR 520 Interchange

A significant volume of SR 520 BRT service will serve the catchment area north of the interchange along I-405. To take full advantage of the new HOV lanes in SR 520, HOV-to-HOV ramps in the northwest quadrant of the SR 520/I-405 interchange could be added to serve buses coming from I-405 to SR 520. These connections would reduce the need for buses to weave through the general purpose traffic lanes when transitioning between the inside HOV lanes on the two freeways.



The Bellevue Transit Center is another important element of our regional transit system.

Direct Access Improvements

Buses could also take better advantage of the HOV lanes if bus facilities (stops or HOV ramps) were located in the median. These facilities are especially important if a trunk-and-feeder service concept is adopted, for which dependable short-headway operations would be required. Possible additional facilities beyond the project limits include:

- A freeway station at Overlake in the new median SR 520 HOV lanes.
- A freeway station to serve the Houghton park-and-ride lot along I-405 or at Northeast 85th Street on I-405 with additional park-and-ride-capacity at that location.

How can a dedicated HCT facility be added to SR 520 after 2030?

As part of planning for the new Evergreen Point Bridge and connecting roadway segments work has been completed to assure that a dedicated HCT facility can be added to the corridor at a future date if the demand for transit service grows to warrant the investment. Previous studies

have identified the possibility of light rail or a busway in the portion of the SR 520 corridor across the lake with a variety of alternative HCT alignments, some inside and some outside the SR 520 corridor at both ends of the bridge.

As a result, the pontoons for the Evergreen Point Bridge will be designed and built to accommodate two-way light rail line or busway. Possible alternative concepts for the floating bridge are illustrated in **Exhibit 4-6**. In addition, studies have been completed by both WSDOT and Sound Transit to assure that the design of the highway approach structures on either side of the lake will not preclude potential future light rail connections.

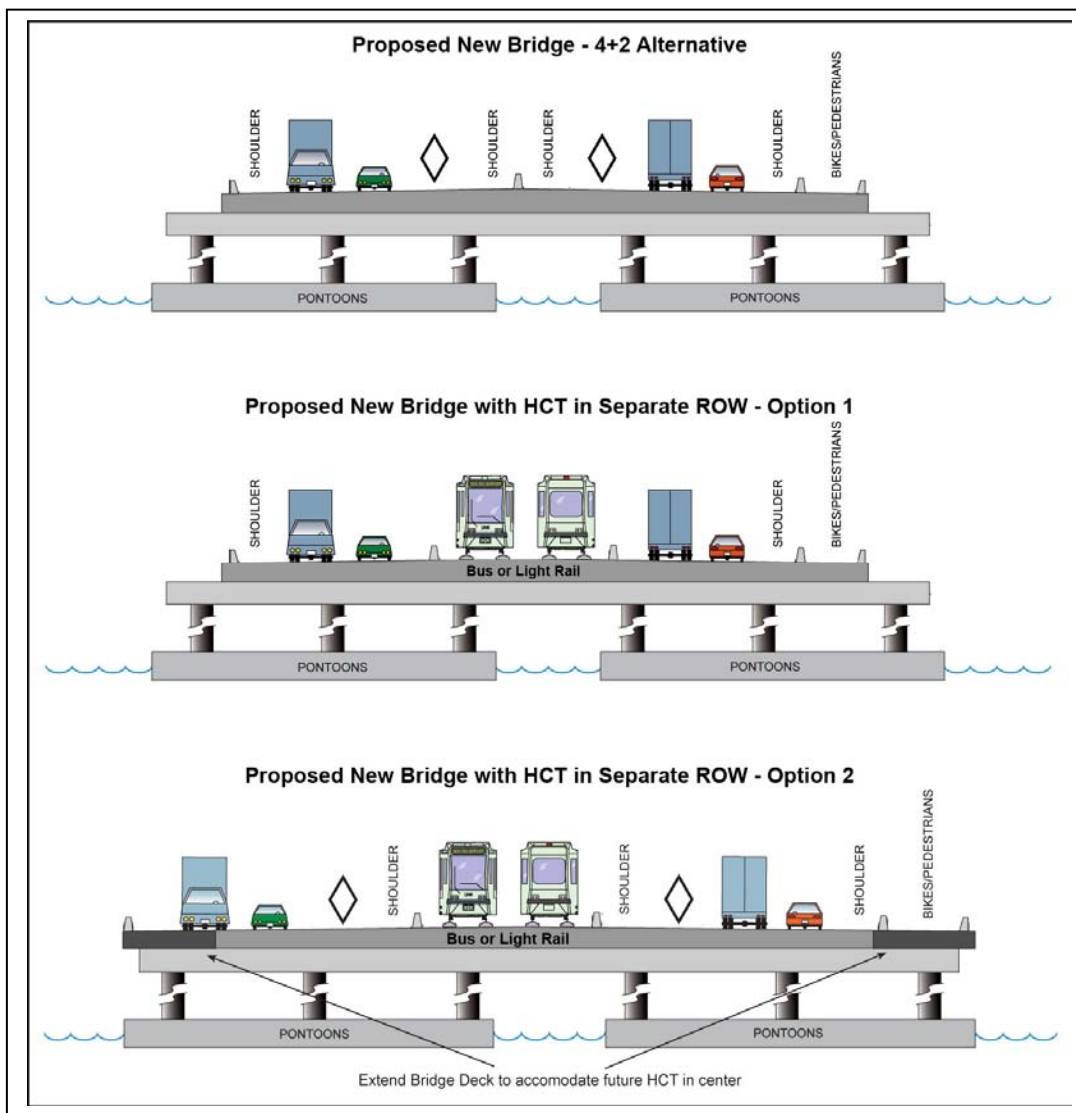


Exhibit 4-6
Future Evergreen Point Bridge Without and With HCT

What is the current plan for the Montlake Multimodal Station?

The confluence of north/south and east/west HCT services and numerous Seattle local bus routes in the Montlake area provides an opportunity to improve transit access to a number of activity centers on both sides of Lake Washington. The primary purpose of enhancements to the Montlake Multimodal Station is to improve the accessibility of transit users to the UW, the dominant transit market in the area. The Montlake Multimodal Station will also be a location for transfers between the existing and planned elements of the HCT network and the local bus transit services provided by Metro and Community Transit for travel to and from other Seattle and Eastside activity centers. The station will not be a permanent terminus for either U-Link or BRT services coming from the SR 520 corridor and will not be a park-and-ride facility.

Current Plans for the UW Link Station

Sound Transit plans to start construction of the University Link light rail line in 2008 and start service to the UW by 2016. The UW Station is located adjacent to Husky Stadium and will provide access to the campus and UW Medical Center, nearby sports venues, and surrounding neighborhoods (**Exhibit 4-7**). Grade-separated access north of the Burke-Gilman Trail and from the Montlake Triangle will be provided for direct access to the upper campus by transit riders, and will minimize conflicts between pedestrians and bicyclists using the trail. Approximately 80 percent of light rail ridership is expected to access the station via walking or bicycle. With U-Link, transfer activity will be introduced between light rail and buses serving the Montlake area, including the existing U-District bound SR 520 buses. Metro expects to alter local bus service to improve opportunities to transfer between modes. Approximately 20 percent of light rail riders are expected to access light rail via transfers from buses.

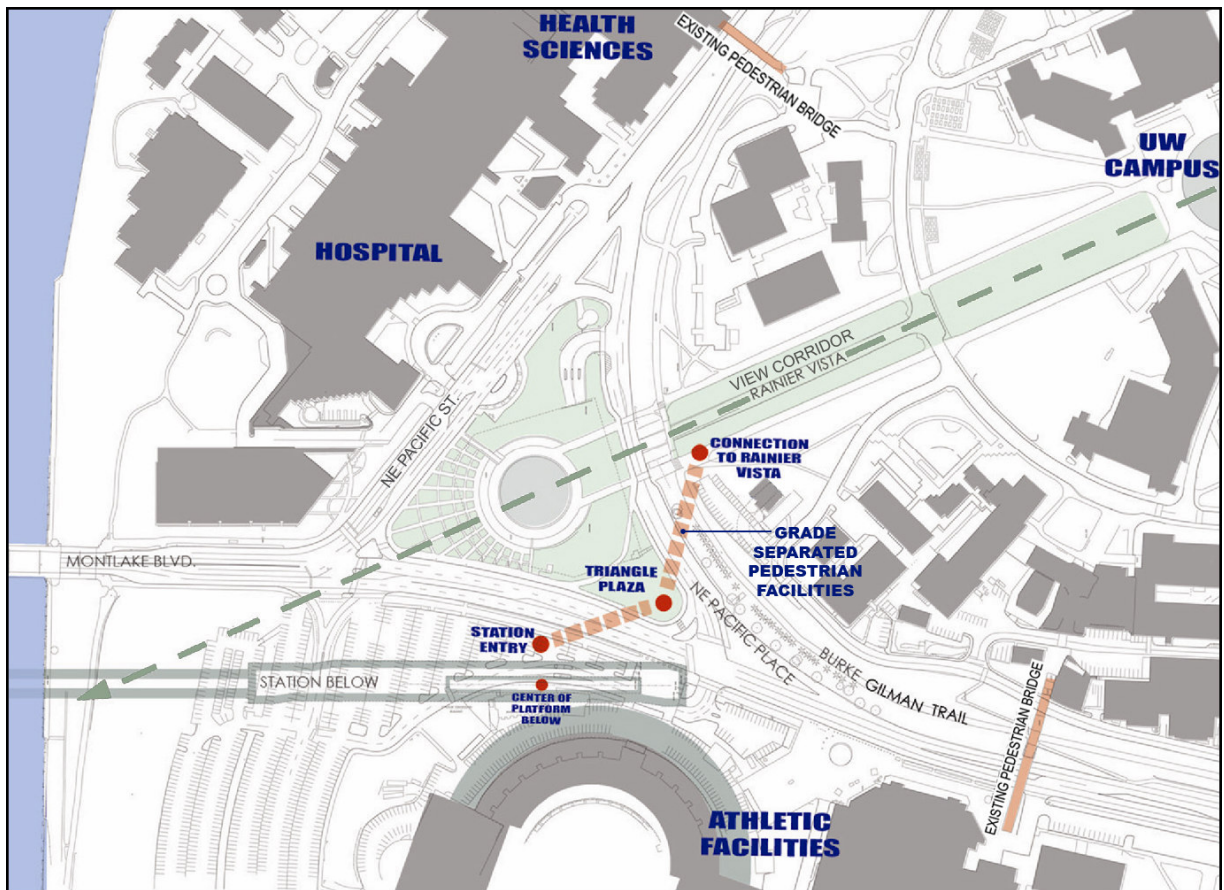


Exhibit 4-7
U-Link – University of Washington Link Station

Relationship between SR 520 BRT and Link Light Rail Transit

The UW light rail station will function as a multimodal interface with pedestrians and bicyclists accessing University District, SR 520, and local transit services and riders transferring between bus routes as well as between buses and the rail system. With the implementation of the ST2 Plan, the Link system will be extended to Northgate by 2018 and then on to Ash Way and 164th Street Southwest in Snohomish County by 2027. These rail extensions will increase the accessibility for SR 520 BRT users via a transfer at the UW station.

Objectives for the Montlake Multimodal Station

The Montlake Multimodal Station should help achieve the following transportation objectives:

- Improve the accessibility to the UW Campus for transit users.

- Enhance rider accessibility and the overall rider experience by reducing the time needed to transfer between modes serving the Montlake area.
- Enhance pedestrian mobility and improve the overall quality of the pedestrian environment in the Montlake area.
- Ensure the effective and efficient coordination of bus and light rail services throughout the SR 520 corridor.
- Provide for needed support facilities including layover space for local buses.
- Replace the function of the Montlake Bus Freeway Station if this facility is not rebuilt.
- Mitigate the impacts on affected parties of the multimodal station, including the establishment of mechanisms to effectively manage kiss-and-ride activities and provide for safe auto access to UW parking facilities.

Exhibit 4-8 provides a diagram of the proposed layout of the Montlake Triangle area, once U-Link is in operation.

Timing for Projects in the Montlake Area

In addition to the SR 520 Project and Sound Transit's U-Link and Northgate extension projects, the UW also has plans for improvements to Husky Stadium and will begin a study this fall of possible landscape and pedestrian improvements for Rainier Vista and the Montlake Triangle. **Exhibit 4-9** illustrates the timelines of these various projects.

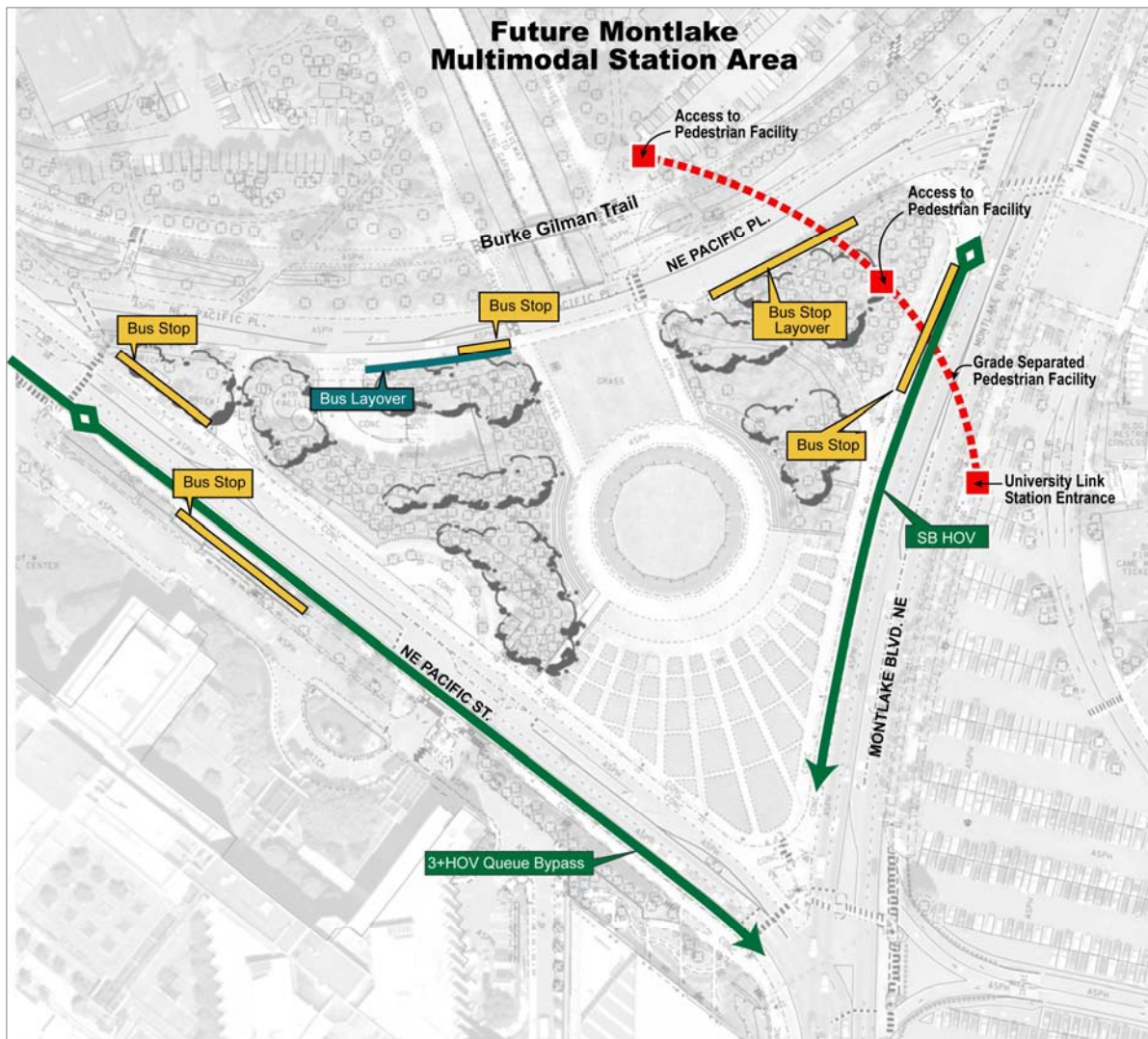
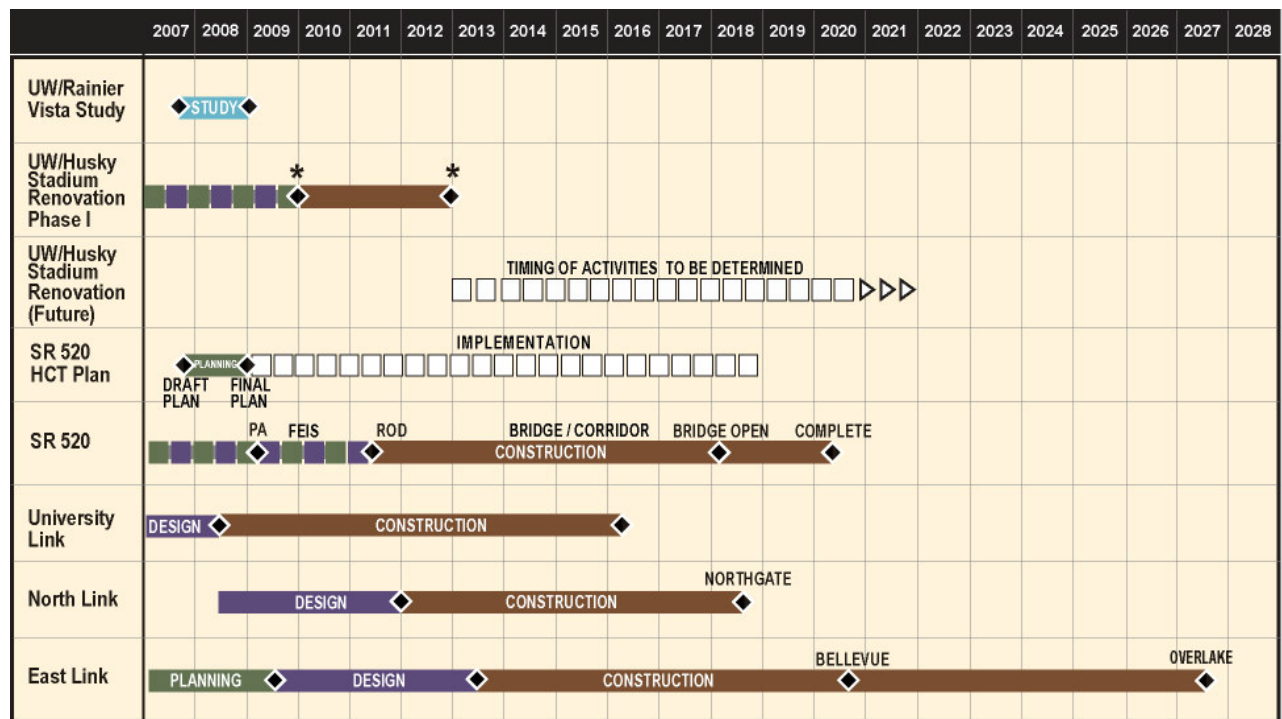


Exhibit 4-8
Montlake Multimodal Station Area

The Rainier Vista Study will get underway this year and should be completed in time to assist in the development of compatible strategies and mitigation actions to enhance the pedestrian qualities of the Pacific and Montlake Triangle area. Phase 1 of Husky Stadium Renovation is expected to be approved by the UW Regents this fall and the second phase is expected to start sometime after 2012. The scope of each phase will be dependent on funding.

Sound Transit's U-Link Project, which is furthest along of all the projects, is in final design and should start construction in 2008, with a



* Estimated Early Date

Exhibit 4-9 Timing of Related Regional Projects

planned opening date of 2016. The federal funding commitment should be obtained in 2009. Both the Northgate Extension and East Link (across I-90) are dependent on a successful funding vote this fall. With voter approval of ST2 in November 2007, the Northgate extension could start final design next year and open in 2018. Sound Transit has initiated a project-level environmental review for East Link with scoping in September 2006 and is scheduled to issue a Draft EIS in the fall of 2008. The ST2 Plan identifies the opening of the segment to Bellevue by 2021 and to Overlake by 2027.

SR 520 is scheduled to identify a preferred alternative in early 2009 and with a successful funding vote this fall anticipates construction starting in 2011 and a new bridge in place by 2018 with the complete project open by 2020.

Chapter 5: HCT Plan Development

Over the next year significant work will need to be done to develop a Final HCT Plan for the SR 520 corridor. This will include the following:

- Development of a BRT concept plan that takes advantage of the new HOV facilities;
- A plan for the enhancement of the Montlake Multimodal Station;
- A strategy to implement any supporting improvements outside the SR 520 corridor; and
- Scope and timing decisions for the ST2 planning study of potential HCT modes and routes along SR 520 between the U-District and Redmond to inform future decisions about HCT on SR 520.

An implementation plan will need to be developed as well. At a minimum this plan should include the following:

- A program for engaging local jurisdictions, stakeholders and the general public in the refinement of the HCT plan;
- A financial plan that includes estimated costs and identifies possible sources of funds to pay for the capital improvements identified in the plan and the long-term operations and maintenance costs of HCT service in the corridor; and
- An implementation schedule that includes roles and responsibilities of the primary parties, as well as the local jurisdictions.

How will a concept for SR 520 BRT service be determined?

BRT service in the SR 520 corridor could be implemented in stages as construction proceeds and the supporting roadway and transit facilities come on line. Bus service across Lake Washington can also play a role in mitigating transportation impacts during the construction of both the Evergreen Point Bridge and the I-90 East Link projects. SR 520 BRT services can begin operation in the corridor as a first step during bridge and roadway construction and evolve into a larger program integrated with Sound Transit's network of cross-lake HCT services. However, a

concept for this larger BRT program needs to be identified and agreed upon at the outset by the implementing transportation agencies.

Additional studies of the BRT concepts are needed to gain a better understanding of the potential ridership and associated service levels for the alternatives, and gain agreement among the parties regarding the costs and other resources that may be necessary to support implementation of a preferred concept. In addition, the performance of the alternatives needs to be evaluated in light of the goals and objectives established for the SR 520 HCT Plan.

The next steps are to refine the BRT concepts and possibly identify new ones. The alternatives then will be modeled to provide estimates of ridership and allow the service levels to be modified and adjusted based on the findings. Ridership forecasts will also support a better understanding of possible additional park-and-ride needs and transfer-facility demands. Once this information is known, more accurate estimates of capital and operating costs can be developed. Finally, the information on performance and costs can be used to evaluate the alternatives and make a recommendation on a preferred concept for implementation. Costs will also support the identification of the resources needed for implementation.

How will the details of the Montlake Multimodal Station be determined?

The primary function of a station in the Montlake area is to facilitate multimodal trips to and from the Montlake area and the University District, and secondarily to facilitate other regional transit connections. Once greater definition is developed for a preferred SR 520 BRT concept, potential bus routings and interfaces with the light rail station can be developed for each of the SR 520 interchange and Montlake Freeway Station alternatives under consideration. Key transfer linkages (bus-rail and bus-bus) can be identified and quantified in general terms. At the same time, the University will begin looking at possible visual and pedestrian improvements to Rainier Vista and the Montlake Triangle. These combined efforts will better define the alternatives and possible mitigation strategies to be studied for the Montlake Triangle area.

A very important first step is for the partners to work together to develop a better understanding of how the Montlake Triangle might be

enhanced as a pedestrian space and better serve as an asset to the UW and surrounding areas. The introduction of Link Light Rail and SR 520 BRT passengers to the area presents an opportunity to energize what is now an area devoid of interest with large numbers of pedestrians. This activity might in turn support the development of public spaces and uses that could become a valuable asset to the area.

For the bus transit elements, concepts will be developed for the Montlake Triangle area that show alternative routing for each bus route group and potential bus stop locations, with the objective being to optimize pedestrian and bike interfaces while providing for effective rail-bus and bus-bus connections. Potential locations for transit and HOV facilities most likely to improve transit reliability should also be determined. These concepts would illustrate how the bus routing and stops would work with both the Pacific interchange and Montlake interchange alternatives, and with and without the Montlake Freeway Stations. Concurrently, efforts should be made to identify alternative bus layover locations needed for local routes terminating in the triangle area as well as SR 520 BRT routes serving the University District, which will likely layover in the northwest portions of the University District.

Further work is need to determine bicycle storage needs in the area, which will likely increase if the Montlake Freeway Station is replaced. Finally, potential pedestrian improvements in the area should be identified.

What is the Roads and Transit Ballot Measure?

In November 2007, voters within the urban portions of King, Pierce and Snohomish Counties will vote on the Roads and Transit ballot measure. The proposed investment totals approximately \$17.8 billion in 2006 dollars, including approximately \$10.8 billion for the Sound Transit 2 Plan (ST2) and approximately \$7 billion to implement the Regional Transportation Improvement District's (RTID's) Blueprint for Success.

If the measure passes, approximately \$1.1 billion will be available to help fund the SR 520 Bridge Replacement and HOV project as currently planned. The package of improvements included in the measure also includes light rail extensions across Lake Washington via I-90 to serve Mercer Island, Bellevue, and Redmond's Microsoft and Overlake Transit Center areas, as well as service from the University of Washington north to Lynnwood. The funding package does not include any capital funding for HCT in the SR 520 corridor beyond WSDOT's basic plan.

How will decisions be made about post-2030-dedicated HCT facilities?

The ST 2 Plan includes an HCT planning study of the SR 520 corridor, which will evaluate HCT modes and routes. HCT modes such as light rail and rail convertible BRT, as well as other modes will be evaluated. The route will include the area between the University District/Montlake and Redmond. Project elements include public and agency outreach; alignment assessment; preliminary ridership forecasts; identification of environmental issues; development of prototypical alignments with potential station locations, park-and-rides and maintenance facilities; and development of conceptual operating plans, operating costs and capital costs. The budget for the study is \$5 million

(2006 \$). Study partners include WSDOT; Metro; the UW and the cities of Seattle, Bellevue, Kirkland and Redmond.

The study would be completed during the 20-year timeframe (2007-2027) for the implementation of ST2. The Sound Transit Board will determine the timing for all the studies within a year after ST2 voter approval. The results of the study will be used to update to the Long-Range Plan to reflect any changes in the HCT designation for the SR 520 corridor. A different form of HCT on SR 520 could then be considered for implementation in a future phase of HCT investments in the region.

How will this HCT Plan be implemented?

An implementation plan for the SR 520 HCT improvements needs to be developed. This plan should include an identification of capital improvements and service enhancements, along with the responsible agencies, estimated costs and potential funding sources. An implementation schedule integrated with the related improvements planned by WSDOT, Sound Transit, Metro and the UW is also needed.

The WSDOT SR 520 Bridge Replacement Project already includes funding for some key elements of the HCT plan, including the HOV lanes, direct access ramps and freeway transit stations. WSDOT's project cost estimates also include the added cost of building the pontoons to support a future HCT guideway on the Evergreen Point Bridge. The Urban Partnership Agreement, recently awarded to the region by the federal government, includes \$128 million to help fund supporting park-and-ride expansion and the purchase of buses to serve the corridor. Some of these funds might be used to pay for increased bus service. In addition, the ST 2 Plan includes a one percent annual Service Enhancement Fund to accommodate growth on the existing system. The Service Enhancement Fund will be managed through the annual Service Improvement Plan (SIP) process. ST2 does not include specific earmarked funds for additional bus service or facilities in the SR 520 corridor.

At the present time funds have not been identified for any enhancements outside the corridor, such as the SR 520/I-405 HOV direct access connections or enhancements for the Montlake Multimodal Station. Further work will be needed if these or similar improvements become part of the SR 520 HCT Plan.

How will local jurisdictions and the general public be involved in developing the final HCT Plan?

The lead agencies will involve the local jurisdictions and general public in the development of the Final HCT Plan for the corridor. This will ensure that a wide range of interests will be heard as the plan is developed further. Target audiences will include:

- Local Jurisdictions,
- Existing transit riders,
- Chambers of commerce,
- Major employers along the corridor, including Microsoft,
- UW students, faculty, and employees, and
- Residents of the Montlake and Capitol Hill neighborhoods.

Public involvement for the high capacity transit study will be incorporated into planned outreach events, including:

- Public meetings on the Supplemental Draft EIS,
- A mediation session for the project impact plan,
- Community and business group briefings,
- Open houses, and
- Web site.

Summary

A plan for HCT improvements in the SR 520 corridor is a key component of the multimodal SR 520 Bridge Replacement and HOV Project, critical for meeting future cross-lake mobility needs. The HOV and transit components of the project provide the primary improvements in people-moving capacity in the SR 520 corridor. WSDOT, Sound Transit, and Metro, with the cooperation of the University of Washington have been working to develop an effective long-term plan for HCT in the corridor since the start of the SR 520 project. The main elements of the HCT Plan have been identified and a substantial body of work has been completed to provide additional details. However, more needs to be done. By the end of 2008, the partners will have worked out the details of a final plan for HCT in the SR 520 corridor, as well as an implementation strategy for that plan. By the end of 2009, the mediation and environmental review processes for the project should lead to a decision on the preferred alternative, including an HCT/BRT plan for the corridor. This will allow

construction of a new bridge to start in 2011. A new bridge could be in place by 2018, and all parts of the corridor improvements including the HCT/BRT system could be functioning by 2020.